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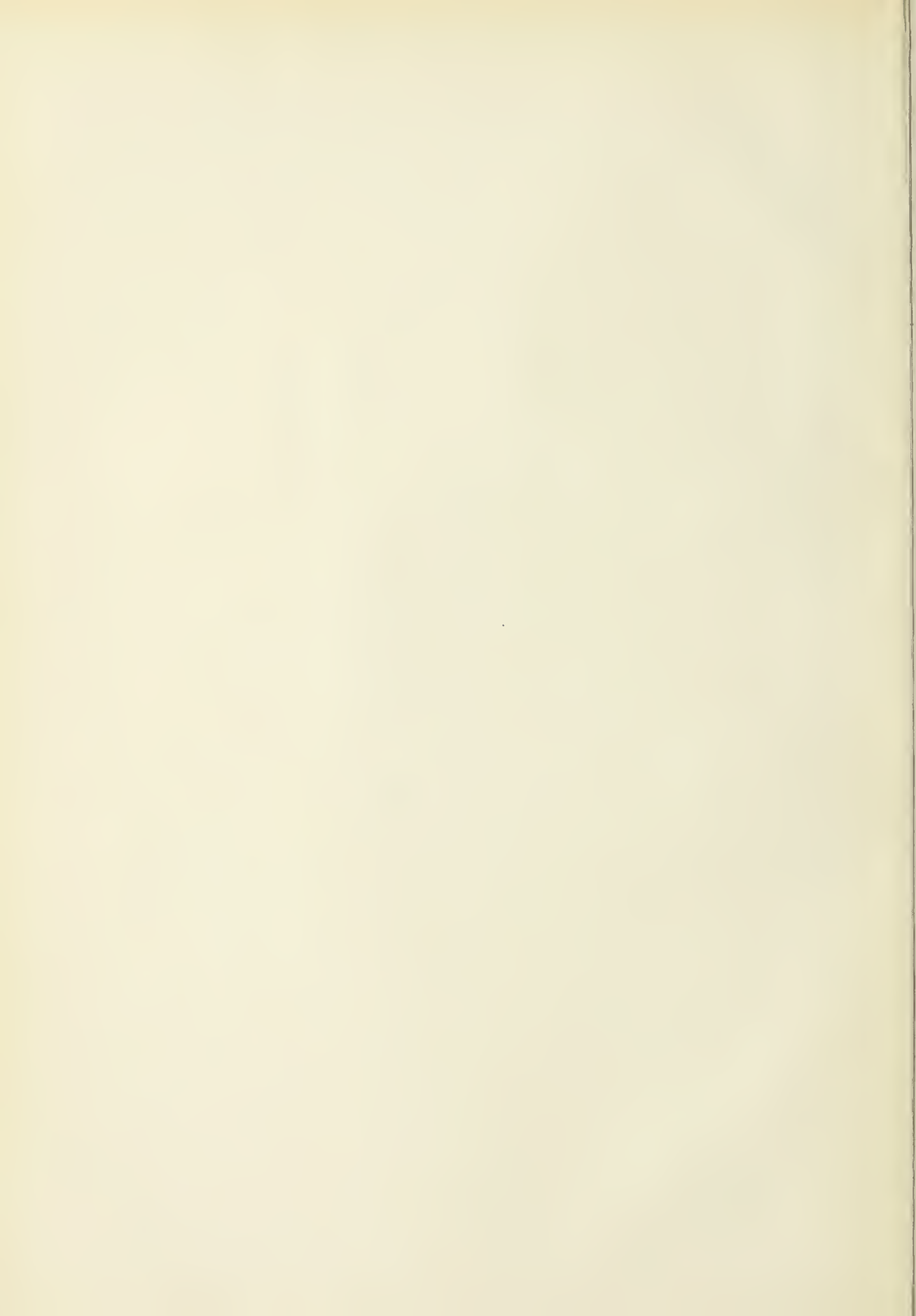
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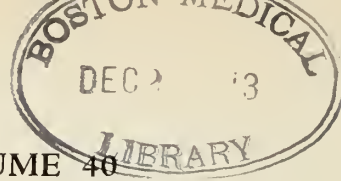
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SYMPOSIUM ON TUBERCULOSIS

INFILTRATIONS OF A TRANSIENT NATURE EASILY MISTAKEN FOR PULMONARY TUBERCULOSIS

E. E. GLENN, M.D.

SPRINGFIELD, MO.

A persistent cough always has been a symptom that causes both the physician and the layman to suspect tuberculous disease in the lungs. This is as it should be. If the cough is accompanied by expectoration, chest pain and hemoptysis the important localizing symptoms of pulmonary tuberculosis, mentioned several years ago by Brown,¹ are present. Certainly a careful examination including a radiogram of the chest is indicated if most or all of these symptoms are present. If the examination reveals physical and radiographic signs of parenchymal disease, especially in the upper thirds of the lung fields, it seems that a diagnosis of pulmonary tuberculosis is justified. However, patients have been observed with all these subjective and objective findings who proved to be non-tuberculous. A report of such cases has been made recently by Karan and Singer.² Tuberculosis was considered as a possible diagnosis in some of the first cases seen in the series reported by Reimann and Havens.³ Hoff and Hicks⁴ evidently considered tuberculosis to be the disease to be ruled out first in the diagnosis of their case showing infiltrations of an allergic nature. Some of the cases of acute interstitial pneumonitis reported by Smiley and associates⁵ could have been mistaken for tuberculosis if a decision had been based on the data obtained from a single examination.

The following cases are typical examples of a group seen in recent years in which a diagnosis of pulmonary tuberculosis seemed justified at the time of the first examination.

CASE REPORTS

Case 1. R.Y., aged 22, a waitress, complained of cough which had been severe for a week but had been present for three months during which time she had tired easily and had lost ten pounds in weight. Harsh breath

sounds were present with no rales or definite impairment of resonance but the radiogram (fig. 1) showed a subapical infiltration on the left with small areas of decreased density within it suggestive of small cavities. A calcified nodule was present in the right midlung field and another in the right hilar shadow. Sputum was negative for tubercle bacilli. The sedimentation rate was 8.5 mm. in one hour (Cutler method). A diagnosis of tuberculosis seemed to be justified because of the radiographic findings and the history. She was admitted to the Missouri State Sanatorium a month later. The infiltration in the left lung had disappeared (fig. 2) and she showed a negative reaction to 1 mg. of old tuberculin injected intracutaneously. Sputum was repeatedly negative for tubercle bacilli and the sedimentation rate was 4 mm. She was discharged from the Sanatorium after three weeks and advised to remain under observation. She has not returned for further examination but several months after leaving the Sanatorium she reported that she had had no further symptoms.

Case 2. G.R.S., female, aged 35, telephone operator, came for examination because of a severe cough. She was donor for a transfusion nine days previous, after which she took cold manifested chiefly by cough with some expectoration and soreness in her chest. Physical examination was negative except for harshness of breath sounds. The radiogram (fig. 3) showed light to moderately dense infiltration in the lower portion of the upper lobe extending upward into the subapical region. Small areas of decreased density were present in the infiltration suggestive of cavities. Sedimentation rate was 25 mm. in one hour (Cutler method). Hemoglobin was 72 per cent and red blood cells 3,930,000. Sputum specimen was not available for examination. A tentative diagnosis of tuberculosis was made and the patient was placed on bed rest and given treatment for the mild secondary anemia. The cough stopped soon after she went to bed and eighteen days later there was practically no evidence of the infiltration which was present in the previous radiogram (fig. 4). Two months after the first examination both the physical and radioscopic examinations were negative. The sedimentation rate was normal and the secondary anemia had disappeared. Six months after onset she reported she was free of symptoms.

Case 3. C.C.P., female, aged 32, housewife, was ex-



Fig. 1. (Case 1.) Infiltration in left subapical region near lateral chest wall. Note calcified nodule overlying anterior end of the right second rib.

amed because of cough and expectoration that began with a chest cold three weeks previously. She had been in a weakened condition for about six months and had lost several pounds of weight. She had an epidermophytosis on her hands which had been worse the last sev-



Fig. 2. (Case 1.) Thirty four days later infiltration in left lung had disappeared. Calcification is seen easily in the right subapical region and in the right hilar shadow.



Fig. 3. (Case 2.) Infiltration in the right upper region which is most dense at the level of the second and third interspaces anteriorly.

eral months. A radiogram was made of her chest which showed infiltration throughout the right upper lobe that was most dense in the subapical region. Leukocyte count was 10,000 with lymphocytes 33 per cent and eosinophils 35 per cent. Physical examination showed some impair-



Fig. 4. (Case 2.) Eighteen days later the infiltration in the right upper lung field had disappeared.

ment of resonance with increased bronchovesicular breathing over the right upper half anteriorly and posteriorly. The sputum was repeatedly negative for tubercle bacilli. She was placed on bed rest and the cough and expectoration decreased. The eosinophilia became less marked, the counts usually showing from 15 to 20 per cent eosinophils. The infiltration in the right lung disappeared after a week and infiltration appeared in the left upper lung. A month later no infiltration was present in either lung. She continued to cough and expectorate some. No tubercle bacilli were found in her sputum and guinea pig inoculation was negative. The sputum was searched for fungi repeatedly with negative results. The stools were negative for *Entamoeba histolytica* and other intestinal parasites which might explain the eosinophilia.

COMMENT

The cases described all had symptoms which caused the patients to seek examination to determine whether or not they had pulmonary tuberculosis. These cases showed a scarcity of physical signs in the chest but early tuberculous infiltrations often do likewise. The infiltrations present in the first radiograms of the first two cases were characteristic of tuberculosis. Case 1 not only showed infiltration characteristic of active reinfection type of pulmonary tuberculosis but healed first infection type of lesions were demonstrated definitely. It is interesting to note that a negative reaction was obtained to an injection of 1 mg. intracutaneously of old tuberculin in this case. All three cases show the value of serial radiograms in diagnosing as well as in following the progress of tuberculous disease in the lungs. An individual is likely to be labeled tuberculous unjustly if one examination is relied upon in making the diagnosis.

It may be argued that these infiltrations are tuberculous in nature although transient in character. The negative tuberculin reaction in case 1 is very substantial evidence against tuberculosis. The rapid and complete recovery in all cases certainly justifies a diagnosis of non-tuberculous disease although all cases of this kind should be kept under observation for several months to make certain there is no recurrence.

The etiology of these cases has not been deter-

mined. It is thought that they represent a subacute form of the atypical pneumonia or acute pneumonitis described by Bowen,⁶ Allen,⁵ Reimann and Havens,³ and others. The more acute cases of pneumonitis are seen in this area, although never in epidemic form, but these are not so easily confused with tuberculosis.

The third case reported has many of the characteristics of the one reported by Hoff and Hicks⁴ as an example of Loeffler's syndrome. The fact that the eosinophilia was most marked when the infiltrations in the lungs were present indicates the infiltrations may have been an allergic response. Except for the eosinophilia this case was similar to the first two reported, and the eosinophilia may have been associated with the epidermophytosis of the hands rather than with the lung disease. Unfortunately I have been unable to obtain further information concerning this patient since three months after onset.

SUMMARY AND CONCLUSIONS

1. Pulmonary disease has been described which at first examination closely resembles tuberculosis.
2. Serial radiograms were most important in arriving at the correct diagnosis.
3. In the absence of tubercle bacilli in the sputum a certain degree of conservatism is indicated in diagnosing pulmonary infiltrations.
4. It is suggested that diseases of this type be called subacute pneumonitis until a more correct name can be given.

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PROGNOSIS IN PULMONARY TUBERCULOSIS

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ST. LOUIS

When a diagnosis of tuberculosis is made, the patient and the immediate family are interested in knowing, first, whether or not recovery will take place; second, the duration of the disability and, third, how complete the recovery will be. Needless to state, such information cannot be given accurately without taking into consideration certain fundamentals in the history, physical examination and in the roentgenologic findings, both from the point

of view of the extent of the disease and the type of existing pathologic condition.

It has been stated by some students of tuberculosis that the most certain thing about the prognosis of this disease is its uncertainty. Those who have had considerable clinical contact with tuberculous individuals will, on the whole, subscribe to this conclusion. Despite this skepticism, there are certain tangible facts about tuberculosis that justify one to assume the role of a prognosticator and to predict the end result in a certain patient. Who can deny

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the clinical fact that a minimal case of tuberculosis has a better chance for recovery than a far advanced one? On the other hand, who can challenge the veracity of the statement that acute miliary tuberculosis and tuberculous meningitis are fatal diseases?

Naturally, the patient with less disease has a much better chance to recover and in a shorter time than a patient with far advanced disease, and, yet one occasionally sees a far advanced patient get well and a minimal case die from the disease, hence, the statement that the most certain thing about prognosis is its uncertainty seems true. What are, therefore, the factors that decide whether the advanced case should recover sufficiently and become clinically inactive and the minimal case become progressively worse and terminate fatally? The answer to this question should be looked for in the following:

1. The character of the pathologic lesion.
2. The type of treatment and advice that the patient receives.
3. Rehabilitation after arrestment of the disease.
4. The socio-economic background of the patient.
5. The cooperation of the patient.
6. Miscellaneous guides.

The Character of the Pathologic Lesion.—It is known that an acute miliary tuberculosis resulting from a hematogenous massive infection runs a rapid clinical course, produces stormy symptoms and leads to death, regardless of the type of therapy used. It also is known generally that caseopneumonic disease with tendency to cavitation has a far poorer prognosis than a benign exudative or exudative proliferative lesion. The chronic proliferative lesion, on the other hand, has an insidious onset, a slowly progressive course and a fatal termination eventually. Needless to state, complications, as discussed in a previous publication,¹ such as tuberculous laryngitis, tuberculous enteritis and tuberculous tracheobronchitis complicate the picture and make the prognosis less certain.

Type of Treatment.—Regarding treatment, it should be realized that the patient who is treated by a physician who understands tuberculosis in all its phases has a much better prognosis than the patient who is in the hands of a physician possessing little knowledge of the disease. Where the treatment is taken is also a factor in prognosis. When specific treatment such as pneumothorax, thoracoplasty or other surgical approaches are indicated, the sanatorium, or a hospital equipped for this type of work, affords a better prognosis for such a patient. The sanatorium, in a general way, offers a better prognosis for the indigent person than the home. On the other hand, certain patients who are temperamentally unfit for sanatorium care are much better off in a home under the care of a competent physician provided they have a room to themselves, have sufficient food, a well balanced diet, and a great deal of patience. Those who show a tendency to healing without pneumothorax after a short period of bed rest have a better prognosis than those pa-

tients who require a pneumothorax because of the progressiveness of the lesion. Recovery is more assured to pneumothorax patients than to those individuals who cannot receive a pneumothorax because of too extensive involvement. Pneumothorax patients also have a better prognosis provided the collapse is good than those who need thoracoplasty. In turn, thoracoplasty patients have a better prognosis than those whose pathology is so advanced that this form of treatment becomes prohibitive. Climate has little, if any, effect on prognosis since the essential treatment is rest of the lungs, whether achieved through the medium of bed, pneumothorax, thoracoplasty or other surgical procedures. The longer the time one gives to recover from tuberculosis, the better the prognosis as regards to the permanent arrestment of the disease.

Rehabilitation after Arrestment of the Disease.—The problem of rehabilitation of the tuberculous patient has not been given the consideration that it merits by those who are responsible for the control of tuberculosis. Looking back into the history of the problem, one discovers that official agencies consistently have underestimated the significance of rehabilitation and, even today, comparatively few public health officials recognize its importance. Thousands of dollars are spent annually to allay symptoms and to check progress of this disease, yet, the importance of appropriating funds for the purpose of safeguarding patients from relapse after discharge from the institution is not appreciated.

The economic status of the majority of tuberculous patients is such that immediately after their discharge from the sanatorium, they are compelled to accept full time employment prematurely. Because of lack of training or lack of choice, they frequently are forced to accept unsuitable employment. Inevitably, such premature, full time, unsuitable work promotes a reactivation of the disease.

Those who are interested in the control of tuberculosis inevitably must realize that the supervision of the tuberculous individual must not end with his discharge from the sanatorium. The great number of relapses and the many deaths which occur within a relatively short time after discharge from the sanatorium make one wonder whether much of the good work of sanatoria is not being lost and considerable amount of public funds are not being wasted. In a follow-up study² of 388 arrested cases of tuberculosis discharged from the St. Louis Municipal Sanatorium, during the years 1923 to 1934, it was found that over 13 per cent of those whom it was possible to trace had relapsed and 11 per cent had died. The relatively low per cent of relapses is due to the fact that a follow-up study was made on discharged arrested cases only.

The Socio-Economic Background of the Patient.—The prognosis is much better in the professional man than in the skilled worker, and, more hopeful in the latter than in the laborer.³ The educated person has a better chance to get well and remain well than the illiterate one.

Cooperation of the Patient.—The non-cooperative tuberculous person, regardless of whether the disease is minimal or advanced, regardless of the type of pathologic condition existing, is doomed. In no disease is the cooperation of the patient as well as his immediate family so important as in tuberculosis.

Miscellaneous Guides.—Miscellaneous guides in prognosis are the history of the patient as to onset, duration and type of treatment received before the diagnosis was made. The patient who has had a high fever for months without showing a tendency to subside after a period of bed rest has a poor prognosis. Daily chills accompanied by fever spell a poor prognosis. The outlook for recovery is not so good in the patient who loses weight constantly despite treatment. The prognosis is somewhat better in women than in men, mainly because they consult a physician earlier and take the treatment longer. It is less hopeful in the age groups from 15 to 29 years. It is less certain in the Negro, the Indian and the Mexican. Complications occurring despite adequate treatment mean poor resistance and, hence, poor prognosis.

Prognosis from the Point of View of Recovery and Length of Life.—According to Drolet,⁴ people developing tuberculosis today have just as much chance of dying from the disease as they did twenty-five years ago since the fatality rate is practically the same. Statistically, Drolet's findings cannot be disputed and are confirmed by table 1, gathered from the Vital Statistics Office and the tuberculosis service of the St. Louis Health Division as follows:

Table 1. Case Fatality Rates In St. Louis for Years 1914-1939, Inclusive

Year	Cases	Deaths	Per Cent
1914	1995	1435	71.9
1915	1993	1347	67.6
1916	2227	1372	61.6
1917	2380	1684	70.8
1918	2085	1499	71.9
1919	1897	1216	64.1
1920	1832	1046	57.1
1921	1802	907	50.3
1922	1763	941	53.4
1923	1725	887	51.4
1924	1484	876	59.0
1925	1376	847	61.6
1926	1425	846	59.4
1927	1234	790	64.0
1928	1343	852	63.4
1929	1505	823	54.7
1930	1337	725	54.2
1931	1308	878	67.1
1932	1090	691	63.4
1933	999	629	63.0
1934	1072	631	58.9
1935	990	608	61.4
1936	1056	667	63.2
1937	919	590	64.2
1938	931	600	64.4
1939	794	475	59.8

It will be noted that Drolet's contention is correct as far as ultimate dying from tuberculosis is concerned. It certainly casts a doubt on the efficacy of the modern treatment of tuberculosis. However, when one studies table 2, the outlook for the tuberculosis patient is much more hopeful from the viewpoint of life expectancy.

While it is true that many people who recover from tuberculosis eventually die from the disease, nevertheless, as seen in table 2, the tuberculous in-

Table 2. Average Length of Life of Descendants From Pulmonary Tuberculosis by Color in City of St. Louis

Year	White	Negro	Total
1914	34.38 Years	30.11 Years	33.46 Years
1919	35.16 Years	30.90 Years	34.01 Years
1924	36.37 Years	29.90 Years	34.10 Years
1929	40.17 Years	32.66 Years	36.86 Years
1934	41.63 Years	32.19 Years	37.05 Years
1939	47.50 Years	35.11 Years	42.11 Years

dividual lives longer today than he did twenty-five years ago; in fact, approximately thirteen years for a white person and five years for a Negro. This increase in the life expectancy can be explained in part, at least, on the newer treatment that patients are receiving today. Improvement in living conditions during the last twenty-five years undoubtedly has contributed a great deal in prolonging the life of the tuberculous individual.

In conclusion, it should be stated that it is much easier to prevent tuberculosis than to cure it; that the prognosis becomes increasingly less certain with continued progression of the disease despite treatment; that the person who understands and remembers his physical limitations despite the arrestment of his disease will live longer than the one who forgets too soon that he ever had tuberculosis and, finally, the outlook for complete and permanent recovery is much better in those patients who enjoy economic security than in those who are forced to depend on the social agencies for their existence.

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LIVER BILE SLEEPS ON

The Journal of the American Medical Association for December 12 says: "For years 'Carter's Little Liver Pills' has been advertised to the public with such claims as the following: 'Wake Up Your Liver Bile—Without Calomel—And You'll Jump Out of Bed in the Morning Rarin' to Go. The liver should pour 2 pints of bile juice into your bowels every day. . . . It takes those good, old Carter's Little Liver Pills to get these 2 pints of bile flowing freely to make you feel "up and up."'" Ivy, Roback and Stein report a series of experiments on dogs with the drugs concerned and they conclude that two pills given intravenously or two, four and six pills intraduodenally 'exert no cholecystokinetic and choleretic effect.' The authors continue, 'That is, they do not cause the gallbladder to contract or stimulate the formation of bile by the liver under conditions which permit the gallbladder and the liver to be stimulated by the hormones which are normally concerned in causing the gallbladder to contract and the liver to secrete.' These experiments were carefully conducted, well controlled and meticulously reported. Now that this evidence regarding the lack of the specific value claimed for these ingredients is available, the Food and Drug Administration may concern itself with claims made in or on the package, and the Federal Trade Commission may give due attention to newspaper and magazine advertisements which either state definitely or imply that these pills have a choleretic and cholecystokinetic action.

WHY SANATORIUM OR HOSPITAL TREATMENT IS NECESSARY IN THE TREATMENT OF PULMONARY TUBERCULOSIS

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ST. LOUIS

Despite the fact that the tuberculosis death rate within the last three decades has dropped from 200 to approximately 50 per 100,000 for the white race, pulmonary tuberculosis is still one of the major health problems and is the leading cause of death in the most useful and productive age groups. It is responsible for fully one-seventh of deaths and for about one-third of all who die between the ages of 15 and 45. Thirty years ago this disease held first place in all mortality statistics while today it ranks about eighth as the cause of death.

The present decline in the death rate from pulmonary tuberculosis has become a well established fact. This has been brought about primarily by the change in the general attitude of the medical profession toward the treatment of pulmonary tuberculosis. This is due chiefly to an increased knowledge of the evolution of the disease and to the more favorable results of present day treatment, but probably the most important factor in bringing about this improvement has been the recognition and development of the sanatorium treatment of this disease. In fact, the first great advance in the development of modern treatment dates back to 1859 when Brehmer opened the first sanatorium for the treatment of tuberculosis at Goerbersdorf, Germany, where he and his associate, Detweiler, introduced the so-called hygienic and dietetic treatment. This event inaugurated the beginning of the erection of numerous institutions throughout the world for the handling of tuberculosis patients.

Thirty years ago the practice of sending tuberculous patients to hospitals or sanatoria was in its infancy and institutions for their care were few and far between. Today there is hardly a county or a state that does not have a number of sanatoria to provide for the treatment of tuberculous patients. These institutions usually are supported by their communities and the only qualification for admission is that the patient be a bona fide resident of the locality. The goal of two beds for every tuberculosis death, the minimum requirement set by the National Tuberculosis Association years ago, is today a reality.

It is conceded by all authorities that, whenever possible, a tuberculous patient should be given the advantage of at least a preliminary course of treatment and instruction in a sanatorium. In no other way will the patient so readily learn the value and rationale of strict adherence to a therapeutic regimen. In the past, institutions limited their admission to patients with early or moderately advanced lesions, that is, to patients who had a reasonable chance for recovery. Today, however, if there are

sufficient beds in a community or state, patients in all stages of the disease are admitted regardless of their condition and regardless of their financial circumstances. The theory is that a patient thus isolated from his family and immediate associates is one less source of contagion and infection.

At present the wide use of collapse therapy and thoracic surgery has made absolutely essential the hospitalization of most patients at some time during the course of their treatment.

When one realizes the protean nature of this disease, its varied manifestations and its contagiousness, it readily can be seen that successful treatment by the attending physician is one of paramount importance. To achieve this end, it is essential for both the physician and patient to have a thorough understanding and knowledge of the therapeutic means that the medical profession has at its disposal today for combating this disease. The underlying keynote or fundamental factor in the therapeutics of tuberculosis is rest, and by rest is implied absolute bed rest.

Regardless of the stage of disease the patient immediately should be placed upon absolute bed rest for at least three months. The importance of rest can best be illustrated by the fact that the respiratory rates of normal persons on absolute bed rest have been found to be between 8 and 12 less per minute than when these persons are engaged in slight or active exercise. This reduction of respiratory work in the daily continuous functioning of the lungs can be estimated to amount roughly to about 480 respirations per hour and 5,760 per twenty-four hours. This enormous reduction in work of the lungs on absolute bed rest is the physiologic explanation of why tuberculous lesions tend to heal rapidly in the vast majority of instances when nature is given an opportunity to assert itself. Fever, which is an expression of toxemia and a constant symptom of activity, gradually subsides, and resolution of the disease process within the lung parenchyma takes place. The appetite improves, weight is gained and cough if present gradually disappears. This in turn favorably influences the body defense mechanism, thus enabling the patient to overcome his infection. Experience has proved that the minimal period required to bring about such a result is three months. In many instances in which the pathologic process is further advanced the rest period may have to be extended to from six to twelve months.

During the bed rest regimen the patient should be examined carefully at frequent intervals to determine whether the physical signs in the lung are clearing. If physical examination does not reveal this tendency, roentgen ray studies at intervals for

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definite evidence of regression or progress are necessary.

From this it should at once become apparent that the most satisfactory method of carrying out the described regime in a given case is in a hospital or sanatorium especially devoted to the care of pulmonary tuberculosis. Such institutions have or should have the advantage of an organized medical staff, constant medical and nursing supervision, facilities for every needed medical or surgical treatment and, if properly conducted, an atmosphere which promotes the necessary rest and mental relaxation of the afflicted individual. A stay in such a place may afford an education which the patient sorely needs if he is to avoid relapse of the disease later. Furthermore, not the least important function of such an institution, particularly in the case of the ignorant and uncooperative patient, is isolation in order to avoid infection of others.

The function of a sanatorium as an educational medium for patients cannot be emphasized too greatly. In the teaching of new health habits and in the demonstrating of proper modes of living, the sanatorium instructs patients not only how to care for their own health but how to live with and protect others. The patients receive both didactic and practical instructions. The didactic training is covered by lectures and pamphlets. Lectures or interviews with each patient are carried out routinely at the time of the first examination on admission and at subsequent re-examination or check-ups. To supplement this, a pamphlet of rules and regulations is given to every individual patient. In this pamphlet are discussed, with constant emphasis, the need of the patient's whole-hearted cooperation in order to get the best results from sanatorium treatment. Such a brochure should contain not only rules of conduct and sanatorium regulations but items of a general nature and their influence on tuberculosis such as rest, fresh air, heliotherapy, diet, the use of tobacco and alcohol, together with instructions and suggestions for the patients in relation to these factors.

The manner of the dissemination of tuberculosis is explained as well as the various methods responsible such as coughing, sneezing, expectorating, kissing, contamination of utensils and body discharges. The viability of the tubercle bacillus in sputum droplets and dust particles, under conditions of drying and freezing and poor light and ventilation, and its death by sterilization, sunlight and fresh air is discussed. All these things are commented on in relation to the patient and his hospital activities and also to the home environment that is to follow. Finally, the prophylaxis of tuberculosis is emphasized and proper personal hygiene is explained.

The ultimate aim of sanatorium treatment should be to restore the patient to normal life within a minimum period of time. Any measure that tends to confine the patient for more than a reasonably limited period is needlessly expensive. Within a prescribed time medical and surgical measures should be utilized freely to aid in the recovery of the patient.

Patients should not be confined to sanatoria for unlimited periods because of positive sputum unless they have been afforded the benefit of collapse therapy. Those with proved negative sputum should be discharged from the hospital. Continued confinement for many cases of advanced disease with positive sputum is a necessary procedure, but for others this practice results in establishing a class of indolent patients who lose their desire to get well.

While it is conceded by all authorities that hospitalization in most instances is ideal, yet, for various reasons, financial or otherwise, it is practically impossible to have all patients taken care of in sanatoria. Sometimes, too, home treatment is actually to be preferred to hospital care, provided the surroundings are satisfactory and suitable nursing care can be obtained. In the past I have handled many cases in the home successfully and can see no valid reason why such a procedure cannot be recommended when circumstances warrant it. The same rules and regulations can be carried out as well in certain homes as in an institution. On the whole, however, the vast majority of patients will do better if they have the opportunity of hospitalization in the early stages of their treatment.

The answer to the question why sanatorium or hospital treatment is necessary in the treatment of pulmonary tuberculosis becomes self evident when one takes into consideration the foregoing observations. In conclusion one might say that when everything is considered the best chance a patient has for recovering from his disease is to be hospitalized for at least a few weeks or months at the outset of his illness. The training and instruction he receives in a well conducted and well regulated institution will be invaluable to the patient and impress indelibly upon his mind, as no other method of treatment possibly can, the importance of the various factors such as absolute bed rest, collapse therapy, diet and regulated mode of living. Having once learned to recognize these important factors, he becomes appreciative and cooperative and is at all times willing to take advice so that in the end he may become fully recovered and again restored to useful citizenship.

317 University Club Building.

"Progress in medical education has been so rapid and so complex that one or more years of internship is uniformly considered essential to complete the preparation of the graduate in medicine for medical practice," *The Journal of the American Medical Association* for December 5 says. "The internships available for the continued education of medical graduates vary greatly in their quality. As a war measure internship in hospitals of the United States does not now exceed one year, since medical school graduates are allowed only twelve months after graduation in which to complete their training before military service. Furthermore, the number of residents has necessarily been reduced to a minimum—by at least one half. Finally, hospital staffs have also been greatly curtailed by entrance of physicians in the military services.

"These developments have increased the demands for interns by hospitals and in some instances competitive bidding has extended to unwarranted salary levels."

LABORATORY AIDS IN THE DIAGNOSIS OF PULMONARY TUBERCULOSIS, ESPECIALLY BLOOD EXAMINATION

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The diagnosis of tuberculosis frequently can be made on the basis of the history alone; at other times the physician is required to utilize all the means at his disposal. In doubtful cases the final decision often depends upon the results of sputum examinations but, on the other hand, when the presence of tuberculosis is known, the question of its activity frequently can be answered by the sedimentation test.

Tuberculosis, like other diseases, has run the gamut of laboratory procedures from agglutination tests to sedimentation rates. Many have been discarded and even the few that remain are given more or less prominence by various phthisiologists.

It probably would be best to say little about those tests which have fallen by the wayside and dwell at greater length upon those which are still in use.

1. *Serologic Tests.*—These tests depend upon the development of antibodies in the blood and a state of immunity in the patient. Since immunity to tuberculosis cannot be demonstrated and even the presence of specific antibodies in the blood is difficult to demonstrate, the basis for these tests is hypothetical. There is no definite correlation between serologic reactions and the diagnosis or prognosis of tuberculosis and the procedure is of research interest primarily.

2. *Agglutination Tests.*—Since the acid-fast family of organisms shows a tendency toward spontaneous agglutination, it is difficult to obtain homogeneous suspensions of the organisms, thus making the agglutination test procedure technically laborious. Precipitin tests are still in the experimental stage. The complement fixation test, which is similar to the Wassermann test, has enjoyed the most widespread clinical trial. Even this, however, is not used generally. A positive reaction in the absence of clinical symptoms does not permit the diagnosis of tuberculosis for false positives are obtained in 3 per cent of normal persons and in 10 per cent of persons known to have syphilis. In clinically recognizable tuberculosis, about 80 per cent of cases give positive reactions.

3. *Blood Cultures.*—In 1932 Loewenstein claimed to have worked out a new successful method for cultivating tubercle bacilli from the blood. However, his findings and results have not been corroborated by other workers and some of his own work has been open to question. The fact that he obtained positive cultures from cases of arthritis, gonorrhea, multiple sclerosis and acne is difficult to explain and the diagnostic value of his procedure is rather slight.

4. *Sedimentation Test.*—This is a form of agglutination test which depends upon and varies with

the fibrinogen content of the plasma and the decreased red blood cell volume. Any change in red blood count, cell volume or hemoglobin, coupled with change in the composition of the plasma, will affect the sedimentation rate.

There are several methods of performing the test. In the original method of Westergren, one measures in millimeters the distance of fall of the red blood cells in the period of one hour. Others prefer to measure the fall during each of the first two or five hours to ascertain the rate of fall rather than the actual distance. Since the test is only a rather crude measure of activity, the simplest and quickest procedure is the best. The Westergren method is employed most universally at present, the technic being as follows: .4 cc. of a 3.8 per cent solution of sodium citrate is drawn up into a 2 cc. syringe. Venous blood is then drawn up into the same syringe until the solution reaches the 2 cc. mark. The blood and citrate are well mixed in a test tube and the solution is drawn up into a long glass tube of 2.5 millimeter bore, graduated in millimeters from 0 at the top to 200 at the bottom. The solution is brought to the zero level and the time noted. At the end of one hour the area of solution free of red blood cells is measured in millimeters. Readings up to 7 millimeters are normal for men and up to 10 millimeters are normal for women.

In evaluating this test it is well to remember the following several considerations:

A. An increase in sedimentation rate can be caused by many conditions which are non-tuberculous such as a common cold, pregnancy or menstruation.

B. Since different methods are used, it is best to ascertain just which method was used before making comparisons.

C. The sedimentation test is of no value in the differential diagnosis between a tuberculous and non-tuberculous lesion.

D. In determining whether a tuberculous lesion is active, a normal sedimentation rate in the absence of symptoms is a confirmation of stability. On the other hand, a normal sedimentation rate often is obtained in the presence of a progressing lesion.

E. The greatest value of sedimentation rate is in following the course of the disease. A progressive decline in the rate is evidence of stabilization of the lesion although the rate often may return to normal long before the disease is arrested. A sudden change in rate from decline to incline indicates a "spread" or increase in the tuberculosis unless some other causative factor can be determined.

5. *The Blood Picture.*—In the red blood cells there is usually a mild normocytic type of anemia with a color index approaching 1. This, of course, varies

with the severity of the infection; a patient with an early infection will have a normal count while one with a severe infection is more likely to have a count in the neighborhood of three million cells. In cases which have fairly severe and frequent hemoptyses the count may go down to two million. Regeneration after hemoptysis, as after other types of external blood loss, is rapid. In persons with no history of hemoptysis the reduced red blood count and hemoglobin are due to the toxicity, the lack of appetite and the poor absorption from the gastrointestinal tract, especially when the latter is involved. Occasionally one sees an anemia which is out of proportion to the roentgen ray picture. It is then well to search for involvement of other organs.

In many chronic fibroid cases and sometimes after collapse therapy there will be a mild secondary polycythemia. This is due to a chronic anoxemia with compensation such as occurs in emphysema and other chronic pulmonary diseases.

The leukocyte count may show little or no change and very rarely reaches more than 15,000. Usually it varies between 5,000 and 8,000 white blood cells with some of the more toxic cases showing counts of from 10,000 to 12,000. The differential count reveals a mild increase in polymorphonuclear neutrophils with a slight shift to the left.

The leukocyte picture *per se* is of no value in establishing the diagnosis of tuberculosis. However, the combination of normal or near normal total count with an increase in the "stab" forms in a person who is obviously ill certainly should arouse suspicions of tuberculosis. In the presence of a known lesion, serial counts may be of some help in following the course of the disease.

Arneth was the first to endeavor to find a relationship between the leukocyte picture and tuberculosis. The latest and perhaps best work is that done by Medlar. He feels that the status of the disease can be ascertained by the ratio between the various elements of the white cells, e.g., the neutrophils predominate in abscess formation, cavitation or ulceration; the lymphocytes are important in healing processes, and the monocytes indicate new tubercles without actual breakdown. Thus, if serial blood smears show an increase in polymorphonuclear cells with or without increase in monocytes while the lymphocyte count drops, it is evidence suggestive of an increase in the disease even if there is no other evidence of it. On the other hand, when a septic type of picture, as that mentioned, changes toward a high lymphocyte, low polymorphonuclear and monocyte ratio, the outlook is favorable. The prognosis is good when the neutrophils are below 65 per cent, the monocytes below 10 per cent and the lymphocytes above 25 per cent.

Medlar's findings have not been accepted widely. Although the leukocyte picture is supposed to mirror the cells taking part in the tuberculous process, there is bound to be some confusion when a healing and spreading lesion are present at the same time. In spite of this, some form of neutrophil-lymphocyte ratio is used in many institutions.

6. *Sputum Examination*—Sputum examination for tubercle bacilli is still one of the principle means of establishing the diagnosis of tuberculosis. At this point it might be well to emphasize the fact that an occasional examination of a smear is not sufficient to rule out the presence of an active lesion. In an early case, ruling out tuberculosis on the basis of one or two smears of the sputum may be almost as dangerous as saying the patient "cannot" have tuberculosis because there are no rales on physical examination. If symptoms persist, one must have recourse to roentgen ray and repeated sputum examination.

Many persons, especially women and children, swallow their sputum either consciously, to avoid the unattractive procedure of spitting, or unconsciously. In such cases it is necessary to aspirate the fasting gastric contents and inoculate them onto culture media or into a guinea pig. This, of course, is not routine office procedure but it is often necessary before the diagnosis can be established.

SUMMARY

Examination of the blood is of little or no value in establishing a diagnosis of tuberculosis. Serologic tests are of experimental value and are not commonly used. The sedimentation test may be helpful in deciding upon the inactivity of a known lesion but the leukocyte picture is usually not. During the course of treatment some physicians follow serial white blood counts while others prefer repeated sedimentation tests. A combination of the two is probably more accurate than either one.

The diagnosis of tuberculosis still depends primarily upon the roentgen ray and sputum examination.

Robert Koch Hospital.

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SAYS COLOR BLINDNESS IS CONGENITAL

"Color blindness is a congenital defect and in the true sense of the term is never acquired," *The Journal of the American Medical Association* for November 28 says in answer to an inquiry. "Extraneous conditions . . . have no influence on the color perception, which may vary from complete absence of color recognition to mere inability to differentiate various shades. There is no known correction for this condition despite the claims of some optometrists."

REPORT OBSERVATION ON EYE DISEASE

Reporting on observations made on more than 200 patients with epidemic keratoconjunctivitis, the acute inflammatory disease of the eye which has spread from ship building plants on the West Coast to the East Coast, Michael J. Hogan, M.D., and Joseph W. Crawford, M.D., San Francisco, report in the current issue of *War Medicine* that: "The disease is most likely caused by a virus, the nature of which is unknown, but which may be related to the herpes facialis group. The condition is not highly infectious. . . ."

THE VALUE OF THE TUBERCULIN TEST

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The material which today is used as Koch's old tuberculin was discovered in 1890 by Robert Koch and was advocated for the treatment of active tuberculosis. Today it is seldom used in the treatment of tuberculosis but has been developed as an important diagnostic procedure, either as the intracutaneous Mantoux test or the Vollmer patch test.

The procedure to be selected varies with the type of work undertaken. In the past the tuberculin test has been advocated chiefly for the mass testing of school children and other groups.^{1,2,3} In that type of work the popular .1 mg. intracutaneous test or an equal strength of purified protein derivative, if properly administered, is perhaps most satisfactory. This strength is sufficiently intense to produce a reaction in practically all individuals who have active infection. It is, of course, not strong enough to produce a reaction in those whose allergic reaction is weak. It is also weak enough that it seldom produces an ulcerative or alarming reaction. The resultant wheal is relatively easy to interpret; i. e., if redness or induration is present in forty-eight hours, the patient has been at some time infected with tuberculosis.

This type of work is tedious and expensive considering the results obtained,⁴ especially at this time while medical service is at a premium. It has a definite educational value, however. In spite of the fact that few if any active cases are found among the tested children or their families, the children are made tuberculosis conscious. As has been so ably expressed by Myers,⁵ the knowledge that a child has been infected with tuberculosis is vital information for the physician and patient and important to remember each time that respiratory illness occurs.

For the busy practitioner, especially when dealing with children whose mothers frequently are alarmed when they see a needle, the Vollmer patch test^{6,7,8,9} probably is the most satisfactory procedure. This must be applied after proper and careful skin preparation or the results will not be dependable. By periodic skin testing¹⁰ of infants and young children, the practitioner and pediatrician not only can discover the children who become infected with tuberculosis and properly direct their lives but he can investigate their families and associates in order to discover the infecting, positive-sputum adult.

Many agencies use tuberculin in screening the associates of known active cases of tuberculosis. This is an excellent procedure but can be quite misinforming. The positive sputum case is diagnosed and isolated and then the associates are tested with

.1 mg. of tuberculin. Those with positive reactions are then roentgen rayed. Those with negative reactions assume that they have not been infected so need never worry about tuberculosis. Many of these so-called negatives would be found positive if they were retested with 1 mg. or possibly with 10 mg.

At the Missouri State Sanatorium tuberculin tests have been done on every white patient admitted since November 1938. From that date to April 1942, 3,040 patients were admitted. Of that number 539 were finally classified as non-tuberculous. Of those classified as non-tuberculous 164 gave negative reactions to .1 mg., to 1 mg. of old tuberculin and, in many cases, patch tests also were found negative. During recent months a patient has not been considered definitely tuberculin negative until found negative by use of 10 mg.^{11,12} However, the patient found negative to the first three tests is rarely found positive to 10 mg.

Each of these 164 cases presented a difficult problem in diagnosis, which was partially facilitated by the tuberculin test. The majority of these individuals were found to have bronchiectasis. However, the differential diagnosis involved such conditions as malignancy, cystic disease, pulmonary decompensation, abscess, chronic empyema, leukemia, tularemia and brucellosis. True, these 164 cases comprised only a small percentage of the total admissions; however, they formed an important percentage of that total.

There are many diagnostic aids in the present day practice of medicine. When dealing with pulmonary pathology one frequently is inclined to rely explicitly on the roentgen ray. While the roentgen ray probably offers the best single diagnostic procedure, it can not present the whole picture. One can state conclusively that a patient has tuberculosis only when the organism is recovered. In the absence of a positive sputum, one must rely on presumptive evidence and it is usually correct; however, should one not, especially in the atypical case, have a positive tuberculin test to help assure that the case is not one of the rarer conditions which may closely simulate tuberculosis?

Missouri State Sanatorium

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CASE REPORTS OF THE BARNES HOSPITAL

CLINICAL AND POSTMORTEM RECORDS USED IN WEEKLY
CLINICOPATHOLOGIC CONFERENCES AT BARNES
HOSPITAL, ST. LOUIS

W. BARRY WOOD, JR., M.D., AND ROBERT
A. MOORE, M.D., Editors

CASE 7

PRESENTATION OF CASE

The patient was a 73 year old colored widower. He was admitted to the Barnes Hospital on February 21, 1941, and died on March 18, 1941.

Chief Complaint.—Swelling of the legs.

Family History.—The patient's wife, aged 41, died from tuberculosis.

Social History.—He was born in Kentucky and lived there or nearby most of his life. He had never been in the tropics. He worked as a common laborer in a packing company near St. Louis for an unstated number of years and his most recent occupation was that of a janitor in an apartment house. His habits were good.

Past History.—He had smallpox in 1900 and two attacks of gonorrhea, one at 15 years of age and the other a few years later. Following the second attack there were swellings in each groin which broke down and discharged for some time.

Systemic History.—Except for neglected teeth, many of which became necrotic, the systemic history was negative.

Present Illness.—In the fall of 1940 the patient first noticed some swelling above his shoe tops when he took off his shoes at night. The swelling became progressively worse and gradually involved the legs and thighs. He insisted that the swelling would decrease when he walked about and would increase after he had lain down for some hours. Exercise of his legs diminished the swelling sufficiently so that he could stand on his feet. Within three months of the onset sores developed on his left lower leg and on the right foot. The patient then sought medical attention and was referred to the Barnes Hospital.

Physical Examination.—Temperature was 37C., pulse 90, respirations 20, blood pressure 190/90. The positive physical findings follow. An arcus senilis was present in each eye and there were bilateral incipient cataracts. The retinal examination showed a few patches of choroidal atrophy and moderate arteriosclerosis. The few remaining teeth were in

very bad condition and all were loose. The tongue was smoother than usual and not unduly reddened. The tonsils were scarred and ragged and there was considerable lymphoid tissue visible at the base of the tongue. There were a few moist rales at the bases of the lungs. The heart was enlarged to the left and the rhythm was irregular due to frequent ventricular extrasystoles. The abdomen was distended and there was marked tympany over the upper quadrants. In the lower abdomen there were signs suggestive of fluid. Palpation of the viscera was difficult but the liver edge seemed to descend one finger's breadth below the right costal margin. In the left inguinal region were multiple scars apparently from previously draining buboes. A large scrotal tumor on the right transilluminated clearly and apparently was a hydrocele. There was intense pitting edema involving both lower extremities and extending posteriorly into the sacral and lower lumbar areas. The overlying skin was stretched tightly and was broken in several places which exuded bloody serum. The skin over the hands and elbows was dry and scaling.

Laboratory Findings.—Blood count: Red blood cells 2,670,000; hemoglobin 63 per cent; white blood cells 6,500; differential, eosinophils 1 per cent, stab forms 4 per cent, segmented forms 65 per cent, lymphocytes 33 per cent, monocytes 3 per cent. Urinalysis: specific gravity 1.015, acid, albumin 2 plus, sugar negative; microscopic 4 to 5 red blood cells per high power field, occasional white blood cell. No Bence-Jones proteins were found in the urine on several examinations. The blood Kahn was positive, Kline test 4 plus, Wassermann test anti-complementary. Blood chemistry: blood sugar (fasting) 115 mg. per cent; nonprotein nitrogen 28 mg. per cent; blood chloride 648 mg. per cent; blood vitamin C of whole blood .46 mg. per cent, of plasma 0 mg. per cent; blood proteins 8.3 mg. per cent, albumin 2.3, globulin 6.0. Circulation time with decholin was 19 seconds, with ether 8 seconds. Venous pressure, 115 mm. water. Vital capacity, 2000 cc. Roentgen ray films of the chest showed hypertrophy of the left ventricle, cardiac enlargement, aortic lengthening and evidence of pulmonary congestion. A film of the abdomen was indeterminate. Lateral stereoscopic plates of the skull, as well as films of the pelvis and both hip joints, showed no changes. Roentgen ray films of the lower dorsal and lumbar vertebrae revealed the presence of hypertrophic osteo-arthritis. An electrocardiogram showed left axis deviation. Basal metabolic rate was plus 23. Stool examination was negative. Hippuric acid liver function test, 22.1 per cent excretion. Gastric analysis showed no free hydrochloric acid including samples taken after histamine injection. Bone marrow smears showed the presence of a large number of clusters of plasma cells, usually in groups of from 5 to 7, which were considered to possess the morphologic characteristics of myeloma cells.

Course in Hospital.—The patient was placed on a diet high in vitamins, calories and proteins. Al-

though he was digitalized and his fluid intake was limited, he failed to improve. He gradually developed an enormous distention of the upper abdomen which was not relieved by a stomach tube. Several of the admission laboratory tests were repeated with no essential change in their values. On March 14 the patient became confused and excited and required a large amount of sedation. On March 16 the temperature which had been normal suddenly rose to 39.5 C. and the pulse to 120. At that time a proptosis of the left eye with edema of the lid appeared and later became marked. No changes in the fundi were noted nor were there abnormal neurologic signs. A lumbar puncture the following day revealed an initial pressure of 200 mm. of water with a rise on right juglar pressure to 270 mm., whereas left juglar compression gave no rise. The temperature remained elevated and the patient passed into coma and died quietly.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: In a discussion of the differential diagnosis in this case let us begin with the presenting complaint—swelling of the legs. Dr. Massie, do you believe that this was the result of cardiac failure?

DR. EDWARD MASSIE: The normal circulation time, the normal venous pressure and the fact that the edema was less marked when the man was in the upright position would indicate that it was not caused by cardiac failure.

DR. ALEXANDER: Do you have any other suggestion as to the cause of the edema?

DR. MASSIE: Both myxoedema and malnutrition at least should be mentioned. The laboratory examination indicated that there was no vitamin C in the plasma. This might be taken as inferential evidence of poor dietary habits over a long period of time.

DR. CARL HARFORD: Could the edema possibly be caused by a tumor in the pelvis which, when the man was flat on his back, pressed on the inferior vena cava, and when he stood erect, dropped downward and forward and released this pressure?

DR. ALEXANDER: Obstruction of the inferior vena cava or of the iliac veins could account for the edema of the lower extremities, but this man also had ascites and one does not see ascites in thrombosis of the inferior vena cava.

DR. W. BARRY WOOD, JR.: One also must take into consideration the osmotic pressure of the plasma proteins. This man had 2.3 gm. of albumin and 6 gm. of globulin. It is assumed generally that each gram of albumin exerts a colloidal osmotic pressure of 5.5 mm. of mercury, and that each gram of globulin exerts a pressure of 1.5 mm. On this basis the colloidal osmotic pressure of the plasma of this patient was 21.6 mm. of mercury, as compared with a normal of about 25 to 26.

DR. LLEWELLYN SALE: Lymph stasis should be considered in the differential diagnosis. This man had a history of venereal lymphopathy and there

were large scars in the groin. These may have been deep enough to involve the vessels carrying the lymphatic return from the legs.

DR. ALEXANDER: Do you think, Dr. Massie, that this man had an aneurysm of the aorta? There are occasional patients in whom an aneurysm presses on the venous return and is responsible for edema.

DR. MASSIE: With the evidence at hand one may make a diagnosis only of syphilitic aortitis with dilatation of the aorta. There are no changes in the roentgenograms to support the diagnosis of an aneurysm.

DR. ALEXANDER: I apparently can not get much support for the suggestion that the edema was caused by venous obstruction. Let us, therefore, turn to the disturbance in the blood of this individual.

DR. CARL MOORE: May I point out that this patient did not have a very marked macrocytic anemia? In the smear there were occasional cells larger than normal, and the mean corpuscular volume was 103 cu. microns, the upper limit of normal being 94. This is the type of macrocytosis that is seen in patients with disease of the liver and in many diseases of the bone marrow.

DR. ALEXANDER: Will you tell us, Dr. Moore, about the diagnosis of multiple myeloma made by you on the basis of the examination of the sternal bone marrow?

DR. CARL MOORE: In the study of the cells of sternal marrow it was found that 22 per cent of the white cells corresponded in their general morphology with the plasma cell. In this cell there was an eccentrically placed nucleus with numerous chromatin clumps and granules within it. The cytoplasm was lightly basophilic and contained vacuoles. These cells correspond with those designated in the atlases of hematology as plasma cells or plasmacytoblasts. In recent reports in the literature it has been assumed that the finding of large numbers of plasma cells in the bone marrow is diagnostic of plasma cell myeloma. Some hematologists might take issue with this conclusion.

DR. ALEXANDER: It should be pointed out that the roentgen ray examination of the femur, pelvis, vertebrae, ribs and skull failed to show any rarefaction of bone similar to that seen in multiple myeloma. Further, no Bence-Jones protein could be demonstrated in the urine. Dr. Taussig, would you please tell us something concerning the Bence-Jones protein?

DR. ALBERT TAUSSIG: May I speak first about the high level of the plasma globulin? This is found in about 50 per cent of cases of multiple myeloma and may reach a figure as high as 9 per cent. This increase in globulin is for the most part neither normal euglobulin nor Bence-Jones protein, but is an abnormal globulin. Some years ago Dr. Barrett Taussig observed that this globulin could be distinguished from the normal globulin by precipitation tests and by the action of formaldehyde in the formation of a gel from the serum. If one can ex-

clude disseminated lupus erythematosus, florid syphilis and tuberculosis, and venereal lymphopathy, a diagnosis of multiple myeloma is justified on the basis of a great increase in the plasma globulin fraction. At one time this man had exophthalmos, and I would like to point out that exophthalmos has been reported as the first clinical sign of multiple myeloma. One must further consider the possibility of an extramedullary plasma cell tumor. There are reports of plasmacytomas in the pharynx and in the lymph nodes of the neck, and the formation of tumor nodules in the liver and spleen. Some of these patients later developed the typical multiple myeloma of bone. There is no adequate roentgenologic examination of the sternum in this patient, and multiple myeloma is not infrequently primary in the sternum.

DR. EDWARD REINHARD: In view of the clinical diagnosis I consulted Dr. Sherwood Moore this morning concerning the roentgen ray films on this patient. Knowing the results of the hematologic examination, he still feels that there is no evidence in the bones of multiple myeloma.

DR. CARL MOORE: It may be of interest to speculate concerning the source of the plasma globulin. As I recall, a case was reported some years ago from Vanderbilt in which the plasma globulin was 19 gm. per 100 cc. of plasma. It was suggested in that paper that the excessive globulin was derived from the disintegration of the plasma cells in the bony tumors.

DR. ALEXANDER: Why did this patient have a low plasma albumin?

DR. WOOD: This has been reported when the plasma globulin is high.

DR. ALEXANDER: Would you tell us, Dr. Walsh, something about the cause of the exophthalmos that developed during the last few days of life.

DR. THEODORE WALSH: The clinical findings are in keeping with the diagnosis of thrombosis of the cavernous sinus.

DR. ALEXANDER: A little later this man developed edema of the left arm. Do you believe that the thrombus propagated down the jugular vein and thence into the subclavian vein?

DR. WALSH: That would be unlikely. Thrombi in the jugular vein and in the sinuses usually propagate distalward from the heart rather than toward the heart. I am at a loss to explain the thrombosis of the cavernous sinus. The patients seen on the otolaryngologic service usually have some primary disease of the eye, the nose or the accessory nasal sinuses.

DR. ALEXANDER: It was proposed that the edema of the lower extremities might have resulted from enlarged lymph nodes pressing on the iliac veins. The occlusion of the cavernous sinus and of the left subclavian vein could be accounted for on the same basis.

DR. WOOD: There are reports in the literature of thrombosis in association with multiple myeloma, and in two of these cases the thrombus was in the

cavernous sinus. It is assumed that this increased liability to thrombosis is associated with the high globulin and the auto-agglutination of red cells which is often present in multiple myeloma.

DR. CARL MOORE: Auto-agglutination was specifically looked for in this patient and was absent.

DR. ALEXANDER: What is your opinion concerning the diagnosis in this case, Dr. Wood?

DR. WOOD: I believe that the man had a multiple myeloma with a terminal thrombosis of the left cavernous sinus.

DR. ALEXANDER: Do you think that he also had a thrombosis of his inferior vena cava?

DR. WOOD: I think that that is possible but not likely.

DR. LAUREN ACKERMAN: In a consideration of multiple myeloma it should be mentioned that some of these patients have deposits in the solid viscera of a substance similar to amyloid, notably in the lungs, heart and larynx. A single focus in one bone may remain as the only evidence for a long period of time, and thus in this patient multiple myeloma cannot be eliminated as a diagnosis because of the negative roentgen ray examinations. I saw a case some years ago in which roentgen ray examination of the bones shortly before death failed to show areas of rarefaction, yet at autopsy there were numerous tumor nodules in many of the bones.

CLINICAL DIAGNOSIS

Multiple myeloma.

DR. ALEXANDER'S DIAGNOSIS

Multiple myeloma.

ANATOMIC DIAGNOSIS

Infiltration and hyperplasia of plasma cells in the bone marrow, spleen, lymph nodes and liver (diffuse myeloma or aleukemic plasma cell leukemia).

Syphilitic aortitis.

Hypertrophy and dilatation of the heart.

Cirrhosis of the liver, slight.

Thrombus in the left cavernous sinus.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: Study of sections of the femoral, vertebral, sternal and cranial diploic marrow confirmed the finding of Dr. Carl Moore. Grossly, the marrow was uniformly red, soft and free of any nodules of tumor. Microscopically, there were many plasma cells and plasmacytoblasts in all of the sections examined. These cells varied in size, shape, staining and character of the nucleus. There were a few in mitosis. Similar cells were present in the spleen, in the portal spaces of the liver and in the lymph nodes.

In a final interpretation of the significance of these cells, three possibilities must be considered, hyperplasia, multiple myeloma and plasma cell leukemia. In certain diseases, notably syphilis and

measles, infiltrations of plasma cells may be found in the viscera and in the bone marrow. This man did have syphilis of the aorta but it was relatively inactive on the basis of the histologic appearance of the aortic wall. On the other hand, the variation in the cells and the active mitosis of them indicate something more than reactive hyperplasia.

If one assumes that multiple myeloma, by definition, is a multiple tumor of the bone marrow, this is not multiple myeloma. If a multiple myeloma may be diffuse then this could be a tumor of the myeloma type.

Plasma cell leukemia also is eliminated by definition as this patient did not have plasma cells in the peripheral blood. However, the changes in the marrow and viscera are not inconsistent with what would be expected in a subleukemic or aleukemic plasma cell leukemia. In the few reports of plasma cell leukemia in the literature, the increase of plasma globulin has been a conspicuous feature.

I am not able to come to any definite conclusion between these two possibilities—diffuse myeloma of bone and aleukemic plasma cell leukemia.

DR. TAUSSIG: What was the cause of the edema?

DR. ROBERT MOORE: I am not able to give you a definite answer to that question. There were a slight cirrhosis of the liver and an ascites. There were hypertrophy and dilatation of the heart, arteriosclerosis of the large vessels and arteriolar nephrosclerosis. Perhaps these two factors favoring edema (portal obstruction and slight cardiac failure) plus the lowered osmotic pressure of the plasma proteins acted together. Certainly there was no anatomic lesion in the veins or lymphatics that caused obstruction.

DR. WOOD: In view of the fact that the pathologist found no obstructive lesion to account for the edema, I would like to suggest the possibility that the globulin present in the plasma in multiple myeloma may not exert the same osmotic force as does normal globulin. Perhaps this patient had an edema on the basis of low plasma osmotic pressure in spite of the high total protein.

DR. TAUSSIG: Is it not true, Dr. Moore, that Ewing mentions a diffuse myeloma without the formation of definite tumor nodules?

DR. ROBERT MOORE: I have not looked in Ewing, but in the book on tumors of bone by Geschickter and Copeland I was not able to find specific mention on this point, although I have a recollection that this type of lesion has been reported.

DR. WOOD: From a clinical standpoint definite evidence concerning obstruction of the inferior vena cava could have been secured by measurement of the femoral venous pressure.

DR. HAROLD BULGER: It is true, is it not, Dr. Taussig, that the Bence-Jones protein is present in the blood plasma of these patients?

DR. TAUSSIG: Yes. A small amount of the plasma protein is Bence-Jones protein. The greater part of the globulin is, as I have pointed out, an abnormal globulin.

CASE 8

PRESENTATION OF CASE

The patient was a 43 year old Chinese man who entered the Barnes Hospital on October 9 and died November 13, 1942.

Chief Complaints.—Pain in the upper right flank, loss of weight and weakness.

Family History.—Two sisters died of causes unknown to the patient.

Social History.—The patient was born in China and came to this country in 1921. He received a fair education in China including some time at college. For the last twenty years he had been employed as a waiter and more recently as a cook and during this period had been able to make an adequate living for his family. He had always eaten Chinese dishes which included vegetable, meat and some fruit but no milk. About once a week for many years he had imbibed an excessive amount of Chinese wine.

Past History.—The patient did not speak English sufficiently well to give a detailed history but apparently he had been in good health until the present illness.

Present Illness.—Six weeks before admission the patient noticed a sudden sharp, stabbing pain in the upper right flank whenever he stooped to pick up something. This pain continued until admission. It gradually became more or less constant and was aggravated by walking, by deep breathing and by coughing. Just before admission, even moving about in bed caused him pain and interrupted his sleep. The pain was relieved somewhat by firm pressure on the right flank where it was most intense. The patient consulted several doctors and was treated with various medications without relief. Three weeks after onset considerable weight loss had developed and yellow pigmentation of the skin and sclerae were observed for the first time. It was then that he noticed that his urine was yellow. During the three weeks previous to admission there was increasing anorexia and a loss of weight of 40 pounds.

Physical Examination.—Temperature was 38.4 C., pulse 105, respirations 18, blood pressure 116/74. The patient appeared fairly well developed and well nourished despite the history of loss of weight. There was questionable icterus of the skin which was difficult to determine because of his race. There was a mild icterus of the sclerae. The teeth were dirty, with some caries, and the gums were receding. The lungs showed scattered fine and medium rales throughout the lower portion of both lung fields. There were suppressed breath sounds at the right base which were interpreted as due to a high right diaphragm which moved poorly. Examination of the abdomen revealed a diffuse bulging in the epigastrium and dullness to percussion extended 6 centimeters below the xyphoid cartilage; the lower edge of the mass was not felt. There was marked tenderness in the right flank and some

tenderness in the right lower quadrant. The tip of the spleen was barely palpable.

Laboratory Findings.—Blood count: Red blood cells 5,190,000; hemoglobin 14.6 grams; differential count, 1 basophil, 40 stab forms, 40 segmented forms, 12 lymphocytes, 7 monocytes. Urinalysis was normal except for a positive test for bile pigment. Stool examination: guaiac test positive, no parasites found. The blood Kahn reaction was 4 plus, the blood Wassermann reaction with cholesterinized antigen was 4 plus, with alcoholic antigen 2 plus. Icterus index was 30. Blood sugar, fasting, 57 mg. per cent; insulin tolerance test within normal limits; blood proteins 7.0 gm., albumin 3.0 gm., globulin 4.0 gm. Prothrombin time, 25 seconds compared to control of 15 seconds. Hippuric acid test, 35 per cent excretion. An electrocardiogram was indeterminate. Gastrointestinal series: the roentgen ray film of the stomach showed an abnormality of contour along the lesser curvature of the prepyloric region indicating infiltration; diagnosis—carcinoma of the stomach. Intravenous cholecystograms revealed non-visualization of the gallbladder.

Course in Hospital.—The fever subsided within two days and the temperature remained within normal limits, excepting as mentioned later, until the day of death. Gastroscopic examination failed to reveal any evidence of gastric neoplasm. Extensive hemorrhagic gastritis of the hypertrophic type was found. Soon after admission signs of ascites appeared and this in turn was soon followed by visible swelling of the ankles. Abdominal paracentesis was done and 1075 cc. of clear yellow fluid were removed. Specific gravity was 1.004 and the cell count was 1,060 cells per cu. mm. Most of the cells were polymorphonuclear leukocytes. Section of sedimented cells was diagnosed as "chronic inflammation."

Gastrointestinal consultants suggested a diagnosis of syphilis of the stomach. This was supported by the chief of the syphilis service and by a surgical consultant.

Further laboratory tests were as follows: The icterus index 9, a sedimentation rate was 1.0 mm. per minute, the gastric analysis revealed a small amount of dark brown "coffee-ground" material which turned congo red paper blue, and lumbar puncture produced spinal fluid with 2 cells, a negative Pandy, a negative Wassermann reaction, total proteins of 25 mg. per cent and colloidal gold curve of 1122321000.

Because of the suggestive diagnosis of syphilis, anti-syphilitic therapy was instituted with bismuth intramuscularly every five days and iodide intravenously every day. After two weeks this treatment was discontinued because the patient's condition had deteriorated markedly during the interval. One week before death a respiratory episode suddenly occurred wherein the patient suffered great dyspnea characterized by prolonged expiration and wheezing. Signs over the lungs

were indeterminate. Roentgen ray examination of the chest revealed diffuse mottling throughout both lung fields. Bronchoscopy done on the suspicion of a foreign body showed only reddened bronchial mucous membrane. The white blood count at that time was 9,300 with 9 stab cells and 77 segmented forms. After a few days the dyspnea became less acute but remained present until death.

At the onset of dyspnea there was gradual elevation of temperature which reached 39.2 C. Pulse and respiration likewise were increased.

During the last ten days of life the patient became mentally depressed and refused to eat. His condition then became progressively worse. During the last week changes in the laboratory findings were noted as follows: A large number of red blood cells with an occasional hyaline cast suddenly appeared in the urine. These, with increase in the white blood cells, persisted in subsequent specimens. The blood nonprotein nitrogen was 31 mg. per cent and the icterus index 20. The red blood cells dropped to 3,600,000; prothrombin time became greatly prolonged to 115 seconds compared to a control of 35 seconds. The platelets were 870,000. The Wassermann reaction on the ascitic fluid was negative in all dilutions except for a 1 plus reading with a cholesterinized antigen with 0.8 cc. Roentgen ray films of the chest taken the week following the previous films showed more pronounced mottling throughout both lungs. In the absence of a definite diagnosis laparotomy finally was advised but the patient succumbed before he could be prepared adequately for operation.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: In going over this man's record it is apparent that the case excited the interest of a great many people, but no definite diagnosis was made. I think everyone agreed that the mass felt in the epigastrium was the liver. This may serve as a point of departure and one can try to reconcile his history and physical finding with the fact that something made his liver extremely large. From the gastrointestinal roentgen ray series a diagnosis of carcinoma of the stomach was made. A malignant tumor had always been a prominent suggestion. Dr. Wood, would you support that diagnosis?

DR. WILLIAM BARRY WOOD, JR.: I think it would be very difficult to rule it out as a possibility. A good many of the man's symptoms could be explained on the basis of malignant tumor of the stomach, but the gastroscopic examination failed to reveal a tumor.

DR. ALEXANDER: If the case had been presented three years ago, before gastroscopy was introduced, would you have been inclined to consider carcinoma?

DR. WOOD: I would have.

DR. ALEXANDER: As Dr. Wood has said, if it were not for the gastroscopic report which showed only hypertrophic gastritis, a diagnosis of a gastric

tumor would have been favored. Gastric carcinoma, one of the most frequent types of cancer, may involve the liver early, with subsequent infiltration into the peritoneal cavity. Would you consider any other primary sites of neoplasia?

DR. WOOD: One would have to include the kidney, particularly because of the pain radiating into the flank.

DR. ALEXANDER: The hematuria would support this suggestion. There was a feeling on the part of several observers that this was syphilis of the stomach and liver. Dr. Hageman, would you favor this diagnosis?

DR. PAUL HAGEMAN: In the published accounts of syphilis of the liver, the symptoms which have been described are indistinguishable from those that this patient had. Syphilis of the stomach is rare but does occur. Certain criteria have been suggested to establish the diagnosis of syphilis of the stomach. These include an infiltrative lesion of the wall associated with other evidences of syphilis and prompt response to antisyphilitic therapy.

DR. ALEXANDER: Dr. Bromberg saw this man and left a note stating that if intensive treatment were given the patient should improve promptly. Treatments were instituted according to Dr. Bromberg's instructions but the patient became so ill that they could not be continued. It was stated in the history that the Wassermann reaction on the ascitic fluid was negative. Do you believe, Dr. Hageman, that this test has significance?

DR. HAGEMAN: Wassermann tests on ascitic fluid have never been standardized. Therefore, it is extremely difficult to evaluate the significance of a negative reaction.

DR. ALEXANDER: Dr. Taussig, have you any additional information on this point?

DR. ALBERT TAUSSIG: I agree with Dr. Hageman. However, if the Wassermann reaction on the ascitic fluid is positive when the blood Wassermann is negative, the test may have considerable significance in the diagnosis of syphilis of the abdominal viscera.

DR. ALEXANDER: In this case then, the test was probably of no great significance. Do you believe that the diagnosis of syphilis is tenable?

DR. HAGEMAN: It is a good possibility.

DR. CARL POLLACK: Because this man was Chinese would it not be well to consider primary carcinoma of the liver?

DR. ALEXANDER: That is a good suggestion. While speaking of diseases common to the Chinese, however, cirrhosis of the liver should also be mentioned.

DR. LLEWELLYN SALE: Are not the roentgen ray pictures of nodular mottling of the lungs compatible with metastases to the lungs?

DR. ALEXANDER: Dr. Bottom, have you seen these roentgen ray films?

DR. DONALD BOTTOM: The shadows do not look like metastatic carcinoma but rather suggest infection.

DR. ALEXANDER: One significant point is that

when this man came to the hospital he was not critically ill; he came because of the pain. Then he developed ascites and the tests for hepatic function, especially the serum proteins and the prothrombin time, soon revealed evidence of marked damage to the liver. If the patient had carcinoma of the liver such a great loss in function would scarcely be expected to occur within three weeks. May this not happen in cirrhosis?

DR. TAUSSIG: Yes, but cirrhosis does not explain the extreme pain.

DR. ALEXANDER: The man was Chinese and drank to excess and also had syphilis. I believe that one should not overlook the possibility that the liver might have been extremely cirrhotic.

DR. CYRIL MACBRYDE: I feel all these points are well taken. Many features of the case certainly point to cirrhosis of the liver, but it would be hard to explain on this basis what was observed in his lungs and why he suddenly began to bleed from his kidneys.

DR. ALEXANDER: Is it not true that syphilis of the liver may be either in the form of hepar lobatum or in the form of a hob nail liver with portal cirrhosis?

DR. HAGEMAN: Yes.

DR. ALEXANDER: In syphilis of the liver one may get a great deal of pain and tenderness due to perihepatitis. One may have fever and leukocytosis as this man had. In support of this diagnosis it may be said that the patient had syphilis, pain and tenderness over his liver, leukocytosis, fever and signs of portal obstruction—all in keeping with syphilitic hepatitis.

DR. CARL HARFORD: I think that in addition to considering the stomach as the possible primary site of carcinoma it should be emphasized that there were lesions in the lung, liver, heart and kidneys which may be interpreted as metastases.

DR. ALEXANDER: That is true. The pulmonary changes remain to be explained. May they have been related to a coronary accident? What do the electrocardiograms suggest?

DR. MASSIE: The electrocardiograms do not give a definite answer to the problem. The occurrence of the nodal rhythm may have been a reflection of the toxic condition of the patient in his terminal state. When one compares the record taken on admission with those taken after his attack of acute dyspnea certain changes are notable. There is a shift from normal axis to definite right axis deviation and from normal to low voltage. These changes suggest right ventricular strain and bring up the possibility that this man had a pulmonary infarct. Perhaps the mottled areas in the roentgen ray of the chest really are infarcted areas. The rounding and dipping of the ST segments in Lead IV do suggest the presence of progressive myocardial damage of coronary type or of a recent myocardial infarction. These ST segment changes, however, are consistent with a pulmonary infarct. Therefore, in conclusion, it appears to me that the

electrocardiographic changes point more to the presence of pulmonary infarction. There is insufficient evidence to make a diagnosis of coronary thrombosis.

DR. CARL MOORE: I would be very much surprised if thrombi were found at postmortem in view of the prolonged prothrombin time. One method of preventing thrombosis is to prolong the prothrombin time artificially by administering dicoumarin.

DR. ALEXANDER: Do you think the dyspnea might have been due to a Herxheimer reaction from intensive antisyphilitic treatment?

DR. HARFORD: I think a Herxheimer reaction usually is manifested by an intensification of the original lesion.

DR. SALE: Should not the possibility of hypernephroma be seriously considered?

DR. ALEXANDER: Yes, I believe it should. The pain in the flank, hematuria and pulmonary shadows suggest this diagnosis.

DR. CARL MOORE: The pain in the right upper quadrant may have been due to a tumor nodule close enough to the surface of the liver to cause perihepatitis.

DR. ALEXANDER: When this patient was first seen it was thought that he might have a sub-diaphragmatic abscess but this now seems unlikely. From the present discussion I am not sure what the consensus of opinion is regarding the diagnosis. From a clinical standpoint there appears to be a portal cirrhosis. Since syphilis may cause such a lesion one may have some justification in assuming the man had syphilitic cirrhosis, but this does not answer the question as to why he had hematuria. On the other hand, there is a good deal of evidence for a tumor involving the stomach, liver, peritoneum and lung.

STUDENT: Is not cirrhosis present in most cases of primary carcinoma of the liver?

DR. ALEXANDER: Yes.

DR. WOOD: Dr. Alexander, which of these two possibilities do you consider most likely? Carcinoma or cirrhosis?

DR. ALEXANDER: I favor the diagnosis of cirrhosis, but I should like to ask you the same question.

DR. WOOD: I am inclined to think that the patient had carcinoma.

CLINICAL DIAGNOSIS

Cirrhosis of liver.

DR. ALEXANDER'S DIAGNOSIS

Cirrhosis of liver? Syphilitic.

ANATOMIC DIAGNOSIS

Cirrhosis of liver.

Carcinoma of the liver of the liver cell type.

Thrombosis of inferior vena cava.

Syphilitic aortitis.

PATHOLOGIC DISCUSSION

DR. MARGARET SMITH: Cirrhosis of the liver frequently is associated with carcinoma of the liver, especially in those of the liver cell type of which this is an example. Cirrhosis has been reported in approximately 90 per cent of carcinomas of the liver cell type and in 60 per cent of the bile duct type. Carcinoma of the liver is a relatively rare tumor but is more common in orientals, particularly the Chinese. The greater frequency of this tumor has been noted in Chinese who have lived in this country for years as well as in those living in their native land.

The multiple emboli of tumor cells in the small pulmonary arteries were the only abnormalities in the lungs which could have accounted for the mottled areas seen throughout both lungs in the roentgen ray. In the lower lobe of the right lung several small infarcts were present. The findings in the lungs together with the tumor and associated thrombus which extended from the vena cava into the right auricle and filled the auricle seem to offer sufficient explanation for the patient's dyspnea.

No anatomic changes were found in the kidneys to account for the hematuria. The low prothrombin in this individual may have been a contributing factor.

The only evidence of the syphilitic infection was the scarring and vascularization of the media of the aorta, characteristic of syphilitic aortitis.

A case of chronic lead arsenate poisoning in a Michigan fruit farmer who had used this as a spray in orchards over a period of thirty years is reported in *The Journal of the American Medical Association* for December 5 by Herbert H. Kilgore, M.D., and Paul S. Rhoads, M.D., Chicago.

"In retrospect," the two physicians say, "the patient recalled that as long as five years before he had attacks of nausea and a quivering sensation of his muscles which kept him awake and restless at night but did not bother him while he was working. These symptoms were most noticeable the night following the use of the spray and decreased in intensity each night until the spray was again used, at which time there was an exacerbation of the symptoms. For two years he had had conjunctivitis, photophobia and blepharitis each time he used the spray.

Seven months previously the patient's hands were cold and numbness extended over the ends of his fingers. A month later the numbness extended over all of his hands and started in his feet. Herpes zoster developed. Vomiting became a prominent symptom. He lost weight and his skin started to scale freely. Later numbness extended to his waist and involved his tongue and lips. He became so weak he could no longer stand or even raise his head.

Laboratory analysis of urine, hair and nails revealed arsenic trioxide. Treatment included vitamin B, as well as heat and massage. Seven weeks after treatment had been started, analysis revealed a considerable reduction of the arsenic trioxide content of his hair and nails and he had gained 25 pounds. He was released from the hospital to continue his convalescence at home and three weeks later he wrote that he was walking about his farm as he desired and still gaining weight and strength.

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JANUARY, 1943

EDITORIALS

THE COUNTY SOCIETY

The responsibilities of the county medical society are always great but become even greater in a time of emergency. The county societies never have needed to be more alert to and in touch with the medical needs of the county than at the present time. The society should set the standards for medical service and be the source of scientific information and advice not only to its members but to the public in the county. The county society holds an important place in medicine and in the nation at all times but it is emphasized in any time of emergency as in wartime.

More than ever before the county society should include in its membership all reputable physicians within its province and it should be strongly organized.

The importance of the county society and the continuation of meetings of county societies during wartime was stressed by Col. Fred W. Rankin, President of the American Medical Association, in an address before the Annual Conference of Secretaries and Editors of State Medical Associations in Chicago on November 20 and 21. Many national organizations of physicians and also some state associations have cancelled their annual sessions during 1943, necessitated by the difficulties of transportation and the considerable demand on the time of the physician. Colonel Rankin pointed out that such reasons do not prevail in regard to meetings of county medical societies.

Colonel Rankin stated that the county medical societies are the organizations most concerned with the planning and support of the work of many agencies concerned in the war effort and that requests of the Red Cross, the county and state health departments, the welfare agencies, the groups charged with the organized treatment of venereal disease, the care of the crippled and the tuberculous and of other agencies which undertake important responsibilities during the emergency go to the county medical society. The county

medical society also has the responsibility for recommendations to the Procurement and Assignment Service, the organization of civilian defense, the blood donor program and, sometimes, recommendations on the rationing of tires, gasoline, fuel and food.

Moreover, physicians require during this time, perhaps more than at any other, the mental stimulation of interchange of medical information. It is more important than ever that at the present time county medical societies be most active and supplement as far as possible the work of national associations.

ANNUAL CONFERENCE OF SECRETARIES AND EDITORS

Medical problems facing the profession during wartime was the theme of the presentations at the Annual Conference of Secretaries and Editors of Constituent State Medical Associations held by the American Medical Association in Chicago, November 20 and 21.

"The greatest future task facing Procurement and Assignment is unquestionably the safeguarding of the civilian health and the procuring of men for industrial plants. On the other hand, let it not be overlooked that the armed forces are the first line of defense, that they must be provided for medically first," said Col. Fred W. Rankin, President of the American Medical Association, in keynoting the conference. The problem of distribution of medical manpower and providing adequate medical care for all citizens was outlined by national leaders in medicine and public health.

The opinion that state rights on medical practice regulations must not be allowed to be barriers to the medical care of the civilian population was expressed by several speakers. It was suggested that, if necessary, temporary medical licenses should be issued to permit relocation of physicians that adequate care could be available. It was suggested that ethical service in a community to which a physician be assigned be a condition requisite for the continuance of such a license during wartime.

What the exact demand for physicians will be during 1943 is not known at present by the Army, Navy and Air Forces as the requirement will depend upon the extent of the war. The selection of physicians for military service will be more difficult now as there is no longer a surplus of physicians in this country. The ratio of 6.5 physicians per thousand men is being maintained for the Navy and the Air Force but the Army has not set a figure.

The quota for physicians in 1942, set in January, was met by November 1, with approximately 42,000 physicians serving the armed forces. Missouri furnished 104 per cent of its quota. Several of the larger states did not meet the quotas set for them while other states with limited medical personnel oversubscribed theirs. This probably will result in credits being issued to states who oversubscribed their quotas for 1942 when 1943 quotas are set. It

was pointed out that the ratio of 1,000 physicians each month must be continued during 1943 with emphasis on the enlistment of physicians in the younger age groups who can be assigned to active duty.

The medical administrative corps now numbers approximately 8,000 men and is providing personnel to conduct the nonmedical duties which in the past have fallen to the commissioned physician.

Health authorities have agreed that one physician for every 1,500 of population is an adequate ratio at present. It was pointed out that maintaining such a ratio undoubtedly will necessitate the relocating of many physicians. At present there is no authority to assign physicians to areas depleted of medical personnel. General belief is that a special law should not be made in this situation just for the medical profession but rather that all phases of a program of voluntary enlistment for relocation be studied. The United States Public Health Service has met some requests by sending physicians who hold reserve commissions with that Service into defense and rural areas for general practice, the fees collected going into state funds and the physician working on a salary basis. The migration of approximately four and a half million persons to four hundred ten defense areas constituted a great problem.

The lowering of the age of Selective Service to 18 years threatens the source of supply of physicians in the future. Solution appears in the promise of Selective Service to request the highest preferment for medical students and in the possible action of the War Manpower Commission whereby selection of students for premedical and medical programs may be made by a national educational board. Within the next three years approximately 20,000 physicians, a 33 per cent increase, are expected to enter general practice.

It was announced that a bimonthly or a weekly news letter containing a brief digest of the latest news of scientific medicine is to be sent to every physician serving with the Army and Navy.

The Conference was attended by Dr. R. L. Thompson, St. Louis, Secretary-Editor; Dr. W. A. Bloom, Fayette, Chairman of the Council, and Mr. Raymond McIntyre, Acting Executive Secretary.

PNEUMONIA DEATH RATE LOWEST ON RECORD

The death rate for pneumonia and influenza from September 1941 to August 1942 was 21 per cent less than it was during the previous twelve month period among policyholders of the Metropolitan Life Insurance Company. The average rate was thirty-two deaths per 100,000 persons. This is 63 per cent less than the rate five years before. The pneumonia death rate per 100,000 on an annual basis for the last six years has been, beginning in 1937, 85.7, 59.5, 55.8, 44.0, 40.3 and 31.9.

Pneumonia and influenza are distinctly seasonal diseases with the death rate curve rising from Sep-

tember and reaching its maximum in the winter months, then declining to its lowest level in August. Five years ago the peak reached in February went to more than 175 deaths per 100,000. In February 1942 the number of deaths was a little more than fifty, a reduction of approximately 70 per cent. Although the contrast is most marked during the winter months, there has been a considerable reduction at other seasons also. In the autumn of 1941 and the spring of 1942, pneumonia mortality was about 60 per cent less than in the corresponding seasons of five years prior and in the summer of 1942 the rate was reduced about 40 per cent.

NEWS NOTES

Dr. John R. Lawrence, Marshall, recently presented a paper on "Blood Plasma" before the local chapter of the Daughters of the American Revolution in connection with the national organization's sponsoring of mobile blood units.

An addition to the Levering Hospital, Hannibal, was dedicated at a ceremony held in the basement of the addition on November 22. The addition to the hospital was erected at a cost of \$102,000.00.

An addition to the Louise G. Wallace Hospital, Lebanon, which will almost triple the hospital's facilities, will be under construction soon according to members of the board of the hospital.

Dr. James R. Amos, Springfield, county health officer, took part in a panel discussion on "Social Problems Arising From the Impact of War Upon Local Communities" at an annual regional conference of the Missouri Association of Social Welfare held in Joplin on November 17.

Dr. Edward Andruss, Holden, was honored at a meeting of the Thirty-Sixth District Masonic Association at Warrensburg, November 20, with the presentation of a fifty-year membership pin. Dr. Andruss was initiated at Centerview on June 27, 1892.

In order to accommodate the graduating classes of St. Louis and Washington universities, the State Board of Health will hold two State Medical Examinations, the first to be held at St. Louis University on February 16, 17 and 18, and the second to be held at Washington University on March 23, 24 and 25.

Drs. M. E. Leusley, P. C. Davis and L. O. Nickell, Moberly, participated in health clinics held at two schools in Moberly the last week in November. One hundred twenty-four persons received immunization treatments at one school and eighty-six at the other. Three hundred twenty children were given dental examinations at the two schools.

"Doctors at War" will be presented as a radio drama beginning December 26 for twenty-six weeks on Saturdays at 4:00 p. m., Central War Time. The broadcast will be presented by the American Medical Association and the National Broadcasting Company in official cooperation with the United States Army Medical Department and the United States Navy Bureau of Medicine and Surgery.

The fifth Annual Congress on Industrial Health, sponsored by the Council on Industrial Health of the American Medical Association, will be held January 11 to 13 at the Palmer House, Chicago. The program includes sessions dealing with "Common Infections in Industry," "Health Problems Associated with the Changing Character of the Work Force," "Industrial Medical Practice and the Emergency," "Streamlining Industrial Medical Service," "Medical Relations in Workmen's Compensation," "Rehabilitation," "Nutrition in Industry." The meeting is open to physicians and others interested in industrial health.

Dr. James Stewart, State Health Commissioner, is appealing to the public to cooperate with the State Board of Health to see that all births are recorded. As there is a continued increase in birth rate and a shortage of civilian physicians, it is feared that many births will go unrecorded. The Missouri law states, "If there be no attending physician or midwife, then it shall be the duty of the father or mother of the child, householder or owner of the premises to notify the local registrar within ten days after the birth."

Drs. Howard B. Goodrich, Hannibal; Hardin M. Henrickson, Poplar Bluff, and James Stewart, Jefferson City, have been appointed members of the State Board of Health to succeed Drs. George W. Gay, Ironton; John Aull, Kansas City, and E. Sanborn Smith, Kirksville. Dr. Stewart is State Health Commissioner but until his recent appointment was not a member of the State Board of Health. At a meeting of the Board in St. Louis on December 7, Dr. Cleveland H. Shutt, St. Louis, was elected president of the Board. Dr. C. H. Neilson, St. Louis, was elected vice president, and Dr. James Stewart, Jefferson City, Secretary.

The Children's Bureau of the U. S. Department of Labor recently has requested the National Research Council to study the training and experience received by graduates of osteopathic schools in connection with their possible participation in such programs as the obstetric and pediatric care of wives of noncommissioned men in service which has been instituted in Missouri. It has been recommended that hospitals used for the care of patients under such programs be approved either by the American College of Surgeons or by the state health agency in accordance with standards for hospital maternity services established by the state

health agency and approved by the Children's Bureau.

Ceremonies for the laying of the cornerstone of the new St. Louis County Health Center were held in Clayton on October 27. The building is expected to be completed in April. It will serve as a national training center for public health student physicians and nurses as well as replace the temporary inadequate headquarters of the St. Louis County Health Department and relieve overcrowding at the St. Louis County Hospital. It will add eighty beds to the present two hundred bed capacity of the hospital. All of the health department's clinics will be housed on the first floor. The second and third floors will be used for administrative offices, class rooms and lecture halls. A forty bed pediatric isolation ward will be on the fourth floor and a forty bed ward for adults with ailments which present special problems for study on the fifth floor. The building, which is being erected with the assistance of federal funds, will cost more than \$500,000.00.

The National Society for the Prevention of Blindness announces that a prize of \$250 will be awarded for the most valuable original paper during 1943 adding to the existing knowledge about the diagnosis of early glaucoma. The award will be made by the society with the guidance of an ophthalmologic committee composed of Dr. Arnold Knapp, Dr. Manuel Uribe Troncoso and Dr. Mark J. Schoenberg. Papers may be presented by any ophthalmologist, student in ophthalmology or research worker of the Western Hemisphere and may be written in English, French, German, Italian, Spanish or Portuguese, but those written in the last four languages should be accompanied by a translation in English. Papers should be in the office of the National Society for the Prevention of Blindness, 1790 Broadway, New York City, by September 15, 1943.

The American Urological Association is offering an annual award "not to exceed \$500" for an essay or essays on the result of some specific clinical or laboratory research in urology. The amount of the prize will be based on the merits of the work presented and if the committee on scientific research deems none of the offerings worthy, no award will be made. Competitors should be limited to residents in urology in recognized hospitals and to urologists who have been in this specific practice for not more than five years. The selected essay will appear on the program of the forthcoming meeting of the American Urological Association, May 31 to June 3, 1943, at the Jefferson Hotel, St. Louis. Essays must be in the hands of the secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee, on or before March 1, 1943.

The first annual Robert J. Terry Lecture was delivered before the St. Louis Medical Society, De-

cember 1, by Dr. Stuart Mudd, Philadelphia, on "Morphology of Pathogenic Bacteria and Viruses as Shown by the Electron Microscope, With Some Practical Implications." The lecture was established through a bequest in the will of the late Dr. William T. Coughlin. In his stipulation that the income from a bequest of \$5,000 be used annually for this lecture, Dr. Coughlin stated in his will: "This I do as a testimonial of my gratitude to Dr. Terry who gave me a position as assistant in his laboratory, which afforded me not only an opportunity to learn the anatomy of the human body and thus to fit myself for surgery but also the means whereby I was enabled to begin my practice in St. Louis." Dr. Terry is professor emeritus of anatomy at Washington University School of Medicine.

The Directing Board of the Procurement and Assignment Service of the War Manpower Commission has requested that the following be presented to physicians: "It is of the utmost importance that the Procurement and Assignment Service for Physicians, Dentists and Veterinarians, immediately has the name of any doctor who really is willing to be dislocated for service, either in industry or in overpopulated areas, and who has not been declared essential to his present locality. This is necessary if the medical profession is to be able to meet these needs adequately and promptly. We urgently request that any physician over the age of 45 who wishes to participate in the war effort send in his name to the State Chairman for the Procurement and Assignment Service in his State." Dr. Robert Mueller, 3115 S. Grand Ave., St. Louis, is the Missouri State Chairman of Procurement and Assignment Service.

DEATHS

Ford, Samuel P., M.D., Parkville, a graduate of the Physio-Medical College of Indiana, 1900; member of the Platte County Medical Society; Fellow of the American Medical Association; aged 72; died August 25.

Dumbauld, Bunn Allen, M.D., Webb City, a graduate of the Kentucky University Medical Department, 1903; member of the Jasper County Medical Society; Fellow of the American Medical Association; aged 69; died October 8.

Blaylock, George A., M.D., Perryville, a graduate of Barnes Medical College, 1903; member of the Perry County Medical Society; aged 63; died November 9.

Mosby, Charles V., M.D., St. Louis, a graduate of the St. Louis College of Physicians and Surgeons, 1900; member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 67; died November 9.

Rupe, James F., M.D., Smithville, a graduate of Ensworth Medical College, St. Joseph, 1886; honor member of the Clay County Medical Society; aged 79; died November 9.

Klinefelter, M. L., M.D., St. Louis, a graduate of Washington University School of Medicine, 1903; member of the St. Louis Medical Society; Fellow of the American Medical Association; member of the Clinical Orthopaedic Society, the American Academy of Orthopaedic Surgeons and the American College of Surgeons; aged 69; died November 28.

Hall, Oscar B., M.D., Warrensburg, a graduate of the University Medical College of Kansas City, 1898; member of the Johnson County Medical Society; Fellow of the American Medical Association; aged 74; died December 1.

ORGANIZATION ACTIVITIES

COUNCIL MINUTES

The Council of the Missouri State Medical Association met at the Coronado Hotel, St. Louis, at 10:30 a. m., December 13. Dr. W. A. Bloom, Fayette, Chairman, presided. Those present were Drs. H. B. Goodrich, Hannibal; Curtis H. Lohr, St. Louis; C. E. Fallet, DeSoto; W. A. Bloom, Fayette; A. J. Campbell, Sedalia; H. L. Mantz, Kansas City; Wallis Smith, Springfield; E. C. Bohrer, West Plains; E. J. Nienstedt, Sikeston, Councilors; H. L. Kerr, Crane, President; A. W. McAlester, Jr., Kansas City, President-Elect; R. L. Thompson, St. Louis, Secretary-Editor; E. J. Schisler, St. Louis, Vice-President; B. Landis Elliott, Kansas City, Chairman of the Committee on Mental Health; Robert Mueller, St. Louis, Missouri State Chairman of the Procurement and Assignment Service; Raymond McIntyre, St. Louis, Acting Executive Secretary. Drs. Morris B. Simpson, Kansas City; G. V. Stryker, St. Louis; Joseph C. Peden, St. Louis, and Mr. Thomas O'Brien, St. Louis, officers of the Community Health League who were meeting at the Coronado were guests of the Council at lunch.

A letter of resignation from Mr. E. H. Bartelsmeyer was read and accepted.

Dr. R. L. Thompson was appointed Chairman of the Committee on Publication.

Mr. McIntyre presented the subject of Group Hospital Service for the entire membership of the Association to enable physicians in small communities to have the same privilege as those in larger towns. After discussion the Chairman was instructed to appoint a committee to study the question. The following committee was appointed: Drs. Joseph C. Peden, St. Louis; L. V. Ackerman, Columbia; W. F. Francka, Hannibal, and J. E. Stowers, Kansas City.

Approval of the educational program on rheumatic fever sponsored by the Metropolitan Life Insurance Company was expressed by the Council.

A request from the Mutual Benefit Insurance Company asking for a letter of endorsement was presented. It was decided that endorsement should originate from each county society at its discretion rather than from the state organization. The subject of group insurance was discussed and upon motion the Chairman appointed a committee, to study the subject and report to the Council, composed of Dr. Goodrich, chairman, and Dr. Lohr and Dr. Mantz.

The subject of gas rationing and attendance at scientific meetings was discussed and it was the consensus of opinion that any meeting at present necessarily will include study of civilian health needs in view of the limited medical care available

and attendance would be classified as professional or occupational use of gasoline. It was agreed that Councilor District meetings need not be curtailed.

Fuel rationing in buildings in which patients are examined was presented as a problem facing the physician in some places. It was pointed out that in many instances this situation existed in buildings and institutions in which patients were cared for and might curtail the work of the physician in caring for the indigent patient.

Dr. Elliott, Chairman of the Committee on Mental Health, reported that the Committee had had a meeting and was studying the problem confronting institutions for mental patients in the state. He discussed several changes the Committee would like to have made in the present laws. The Council endorsed the work of the Committee and referred the Committee to the Community Health League for any legislative work it wished to have sponsored, with the suggestion that the Committee on Tuberculosis be consulted as to the tuberculosis hospitals in the state.

Mr. McIntyre reported that he had attended meetings of the following component societies: Jackson County, Eighth Councilor District, Clinton County, St. Francois-Iron-Madison-Washington-Reynolds County, Cape Girardeau County, Scott County, St. Louis Dermatological Society, Saline County, Platte County, North Central County, Nodaway-Atchison-Gentry-Worth Counties and Cass County. He also reported that he had attended the Conference of Secretaries and Editors at the American Medical Association and had visited the Ohio and Indiana association headquarters.

It was reported that twenty-nine booths had been sold for exhibits at the 1943 Annual Session.

The Council approved the action of the Committee on Maternal Welfare and Infant Care in approving the program of the State Board of Health in regard to obstetric and pediatric care for wives of noncommissioned men in service but felt that it should be discretionary to the individual physician and hospital as to participation.

The Treasurer's report was read as follows:

STATUS OF FUNDS

Treasurer's Account.....	\$16,416.23
Secretary's Account.....	470.39
Cash on Hand.....	19.72
Total.....	\$16,906.34

The Chairman appointed the following Committee on Appropriations: Drs. Bohrer, chairman; Smith and Campbell.

It was voted that a committee be appointed to study the Revision of the Constitution of Missouri, the Executive Secretary to be a member of the committee.

It was voted to allow the Committee on Amendments to the Constitution to secure legal advice on the Constitution of the Association.

The Acting Executive Secretary reported on the meeting he attended in Chicago covering the following subjects: Procurement and Assignment

Service, industrial health and various problems that confront the medical profession. He made the following recommendations: That the Council meet more often at definite stated times or that there be a smaller advisory body; that a Committee on Public Relations be appointed; that closer cooperation between the Association and the State Board of Health be obtained. These recommendations were held for consideration at the next meeting of the Council.

It was suggested that the Acting Executive Secretary attend the meeting of the Council on Industrial Health to be held in Chicago in January.

Upon motion the following budget for 1943 was accepted following recommendation by the Committee on Appropriations:

BUDGET

Salaries	\$14,520.00
Printing of THE JOURNAL.....	8,000.00
Public Relations.....	1,000.00
Defense	1,000.00
Postage	1,100.00
Postgraduate Instruction.....	1,000.00
Printing and Stationery.....	750.00
Traveling Expense.....	1,100.00
Telephone and Telegraph.....	600.00
Rent of Office and Light.....	1,100.00
Meetings:	
Annual Session	
Council and Councilors' Expenses	}..... 5,000.00
Committee Meetings	
Delegates to A. M. A.	
Miscellaneous and General Expense.....	700.00
	<u>\$35,820.00</u>

Mr. O'Brien gave a short talk on the Community Health League and stated that the League expected to sponsor the "Doctor Prefix" bill and the "Basic Science Law" at the coming session of the legislature. He stated that the Greene County Chapter of the Community Health League had been outstanding in its work.

Dr. Mueller spoke briefly on the Procurement and Assignment Service and stated that he shortly would attend a meeting at the Seventh Corps Area headquarters and would furnish each Councilor a report on that meeting.

After brief reports by individual Councilors the Council adjourned.

W. A. BLOOM, M.D., Chairman.

INCIDENTALLY

From the Acting Secretary

All information points to physicians for civilians as primary effort of Procurement and Assignment Service for 1943.—Senator Pepper's report to his full committee on the Medical Manpower hearing should be interesting.—Why should some physicians desire Federal control of the medical profession?

Should not county medical societies assume

leadership in all matters pertaining to public health in their communities?—A. M. A. recommends that all state associations create war participation committees.—Although losing its initiative to the people for a basic science law, the California Medical Association should have gained much through its educational campaign.

Many states probably will change their present medical licensure laws to meet the necessity of relocating some physicians.—The physicians really turn out around Springfield for medical meetings. Incidentally, the Greene County chapter of the Community Health League almost owns the League from reports received.

The new Missouri Legislature starts work before long.—The component county medical societies of the Missouri State Medical Association are excellent hosts.—1943 may produce much additional activity on every front, and the medical profession will be in the middle of it.—Ideas for this column will be appreciated by the Acting Secretary.

May all members of the Missouri State Medical Association, wherever they may be, have a happy, prosperous and safe New Year.

MISCELLANY

ADDITIONAL MEMBERS OF THE MISSOURI STATE MEDICAL ASSOCIATION IN MILITARY SERVICE

Broyles, W. A., Bethany
Bussabarger, Robert A., Wardell
Cook, O. W., Caruthersville
Donnell, Robert H., Crystal City
Ellis, Coburn, Sweet Springs
Koch, Robert E., Clayton
Limbaugh, Walter R., Hayti
McKinstry, Karl V., DeSoto
Richtarsic, S. R., University City
Scott, Henry F., Ballwin
Sterling, C. E., St. Louis
Wessling, Alfred L., Bethany
Yoskit, Harry, Festus.

RELOCATION OF PHYSICIANS

At a joint meeting of the executive committee of the Federation of State Medical Boards of the United States and the directing board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians of the War Manpower Commission, on December 6, in Washington, D. C., the following draft of proposed legislation and statement of principles was drawn up and approved. The purpose of the proposed legislation is to authorize and provide for the temporary admission to practice in a state of physicians and dentists to protect the health of the civilian population during the war emergency period. The statement of principles, the Federation states, is suggested as a means by which this relocation of physicians and dentists can be done.

A Draft of Proposed Legislation to Authorize and Provide for the Temporary Admission to Practice in a State of Physicians and Dentists to Protect the Health of the Civilian Population During the War Emergency Period.

Be It Enacted:

Section 1. Purpose. A serious public emergency exists or may exist in this State because of the demands

of the armed services for physicians and dentists. Cooperation on the part of the State, with certain Federal agencies, such as the Procurement and Assignment Service for Physicians, Dentists, and Veterinarians of the War Manpower Commission is imperative, so that temporary relocation of physicians and dentists may be accomplished, to overcome acute shortages in specific localities from time to time. For the protection of the health and welfare of the people of the State, power to provide for the temporary admission to practice in the State of physicians and dentists, licensed as such outside the State, is hereby conferred upon the State Board of Medical Registration and Education and the State Board of Dental Registration and Education upon conditions and under regulations prescribed by them.

Section 2. Power to provide for the temporary admission to practice medicine and dentistry in the State. To accomplish the purpose set forth in Section 1, and notwithstanding any inconsistent provision of law, the State Boards of Registration and Education in Medicine and Dentistry shall have power by general regulations or specific orders, to issue temporary emergency certificates to such physicians and dentists, licensed as such outside the State, as they shall find qualified to practice as such in the State during such emergency. The holder of any such temporary certificate shall be privileged during the term specified therein, unless sooner revoked, to practice his profession within the State subject, however, to all laws of the State generally applicable to the practice of such profession and to such regulations, restrictions, and area limitations as the State Boards may make or impose as to them or any of them and their practice within the State.

Statement of Principles to be Recommended to the Respective State Boards of Registration and Education in Medicine and Dentistry.

I. The need for relocation or assignment of physicians or dentists shall be determined by the Directing Board of the Procurement and Assignment Service with the aid of the State Committees of the Procurement and Assignment Service and other agencies and on agreement with the State Boards of Registration and Education in Medicine and Dentistry.

II. These needs shall be met as far as possible by the relocation of physicians or dentists holding licenses within the State.

III. Whenever possible needs shall be met by taking full advantage of existing provisions for reciprocity between the states and inter-state endorsement.

IV. Whenever existing laws make impossible the granting of temporary certificates, state boards should recommend to the Governor and to the state legislatures the earliest possible enactment of the bill designed to make possible the utilization of physicians and dentists under temporary certification.

V. When existing measures for relocation of physicians or dentists prove inadequate State Boards of Registration and Education may request the Directing Board of the Procurement and Assignment Service to certify to them the names and qualifications of physicians and dentists who have volunteered or who may be otherwise available for relocation, at which time also such physicians or dentists may be notified that their names have been sent to the State Boards making such requests.

VI. The physician or dentist who accepts relocation shall agree to assignment to the specific area in which services are required and to acceptance of a certificate which limits the duration of such service to the period of the emergency and for such additional time as the state boards may prescribe.

VII. In view of the emergency character of this action, the Committee representatives, the Directing Board of the Procurement and Assignment Service, and the Federation of State Medical Boards of the United States, recommend that fees for such certification be waived or reduced to a minimum.

EXPLAINS MEASURES TAKEN TO SAFEGUARD NATION'S LIMITED STOCKS OF QUININE

Measures undertaken to safeguard the nation's limited stocks of quinine are summarized in *The Journal of the American Medical Association* for November 28 by Lewis H. Weed, M.D., Washington, D. C., chairman of the Division of Medical Sciences of the National Research Council. He points out that troops cannot operate successfully in malarial areas "without an effective antimalarial drug. Malaria is present throughout most of the tropical and subtropical world. The extent of operations in these regions is steadily increasing and it is conceivable that they may grow to tremendous proportions within a short time. Ninety per cent of the world's customary sources of quinine was cut off when the Japanese invaded Java and the Philippines. . . ."

He explains that a program for conserving the nation's limited stocks of quinine has been worked out by the joint efforts of the War Production Board and the National Research Council. In addition to freezing present stocks and restricting the use of quinine to the treatment of malaria persuasive efforts have been instituted by the War Production Board to bring in all unopened packages of quinine, and the machinery is now being set up for bringing in opened packages.

The Subcommittee on Tropical Diseases and the Committee on Medicine of the National Research Council have given an opinion that totaquine should prove to be as effective as quinine sulfate in the treatment of malaria by mouth. Totaquine is an antimalarial drug containing less quinine than the pure quinine drug ordinarily used to treat malaria and other conditions.

The program also has involved stimulating increased production of atabrine, a synthetic antimalarial drug. It is the consensus of the Subcommittee on Tropical Diseases of the National Research Council "that until we have had more experience with the use of atabrine it should be used only under the guidance of a physician or public health officer," Dr. Weed says.

"It is anticipated on the basis of recent investigations by the Board of Economic Warfare that the barks from South America, of low quinine content but sufficiently rich in total crystallizable alkaloids . . . to make totaquine of U. S. P. standards will be found in sufficient quantity to enable totaquine to replace civilian quinine requirements. The amount of this bark which is available has been an unknown factor, because its low quinine content has not made it previously marketable.

"If every physician in civilian practice and every public health officer will follow the recommendations of the Subcommittee on Tropical Diseases regarding the use of atabrine and will use totaquine in place of quinine whenever totaquine is available, an important and material conservation in our limited stocks of quinine will be accomplished."

CORRESPONDENCE

STANDARDS OF HOSPITALS

American College of Surgeons

Chicago, Ill.

November 24, 1942

To the Editor:

The inroad of osteopaths to the hospitals of Missouri is assuming a more or less serious condition in certain areas. You, no doubt, are aware what has happened in Callaway County Hospital, Fulton, Missouri, lately. More attempts of this nature will probably be made, and perhaps carried through successfully. It is hoped that determined efforts will be put forth by the Missouri State Hospital Association and the Missouri State Medical Association, as well as other interested groups, to prevent this lowering of standards.

You are probably aware that when a hospital extends privileges to others than regular members of the medical and dental professions, it is lowering its standards for acceptance as a registered hospital of the American Medical Association, as an approved hospital of the American College of Surgeons and as an institutional member of the American Hospital Association. It means the breaking down of the standards which have been built up and maintained during the past quarter of a century. It presupposes a lowering of the standards of training of interns, residents and nurses. In every way it has a destructive influence and tendency.

Group Hospital Service directed by Ray McCarthy, has been, and is doing, a noble work in the maintaining of high standards throughout the state of Missouri. The association as you no doubt know, will not extend its services to clients desiring to be hospitalized in such institutions which accept practitioners of medicine other than recognized medical schools. I am sure the Missouri State Medical Association concurs fully in this respect, but at the present time greater activity is needed to oppose the breaking down of recognized standards through popular vote, which sometimes fails to recognize the true worth and spirit of scientific medicine.

I trust that the Missouri State Medical Association will do everything possible to control this condition, and it is for this reason I am communicating with you today.

With all good wishes in your work I am,

Very sincerely yours,

MALCOLM T. MACEACHERN, M.D.

mtm/w

Associate Director

NATIONAL CONFERENCE ON MEDICAL SERVICE

December 8, 1942

Mr. Raymond McIntyre, Secretary
Missouri State Medical Association
634 N. Grand
St. Louis, Missouri

Dear Mr. McIntyre:

The date for the 17th annual meeting of the National Conference on Medical Services has been set for Sunday, February 14. This meeting is held annually in connection with the Congress on Medical Education and Licensure, you will remember, which is scheduled this year for February 15 and 16. The place of meeting will be the Palmer House, Chicago.

I am writing to you now to solicit your cooperation in arranging this program. We all know that the postwar period will present many critical problems to the medical profession as well as to all other lines of endeavor and that a great deal of legislation with strong socialistic tendencies will unquestionably be introduced into Congress.

In order to meet this situation a great many feel that medicine should be better represented in Washington than it is at the present time. That there should be a permanent office there, adequately manned, so that reliable information about health can be furnished to the bureaus, Congressmen and Senators as well as the doctors back home. These men feel that this is a proposal of the greatest importance and that it should be our major topic of discussion at the meeting. We solicit your opinion either pro or con on this important matter, together with your suggestions as to people who could take part in the discussion. We will welcome suggestions, also, as to other important matters which should be discussed at this meeting.

We will be waiting to hear from you and would very much appreciate an early reply.

Sincerely yours,

W. L. BURNAP, M.D., Secretary

WLB mh

COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL 1943

(SOCIETIES WHICH HAVE PAID DUES FOR ALL MEMBERS AND DATE PLACED ON HONOR ROLL)

HONOR ROLL

- Perry County Medical Society, November 24, 1942.
- Benton County Medical Society, November 27, 1942.
- Chariton County Medical Society, November 28, 1942.
- Camden County Medical Society, December 3, 1942.
- Miller County Medical Society, December 3, 1942.
- Barton County Medical Society, December 4, 1942.
- Scott County Medical Society, December 8, 1942.
- Montgomery County Medical Society, December 9, 1942.
- Moniteau County Medical Society, December 14, 1942.
- Cass County Medical Society, December 17, 1942.
- Ste. Genevieve County Medical Society, December 21, 1942.

ASSOCIATE EDITORS: COUNCILORS OF THE TEN COUNCILOR DISTRICTS

FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR
Nodaway-Atchison-Gentry-Worth Counties
Medical Society

The Nodaway-Atchison-Gentry-Worth Counties Medical Society held a dinner meeting at the Linville Hotel, Maryville, December 7, with the President, Dr. Charles T. Bell, Maryville, presiding. Members present were Drs. Bell, J. M. Boyles, Hiram Day, Loren E. Egle, W. R. Jackson, Robert C. Person and William M. Wallis, Maryville; Charles W. Kirk, Hopkins; Benjamin F. Byland, Burlington Junction; Charles D. Humbert, Barnard; and Henry C. Bauman, Fairfax. Guests who attended were Drs. Andrew B. Jones, St. Louis; Charles H. Flynn, Shenandoah, Iowa; Adolf Krakauer, Robert J. Matthews, Pearce E. Newport and Norman Render, Clarinda, Iowa; E. L. Enis, Ed Miller, Jesse Miller and Dillard J. Thomas, Maryville, dentists, and Mr. Raymond McIntyre, St. Louis.

A motion was carried that action be accepted at the next regular meeting to amend the Society's constitution and by-laws to the effect that ethical dentists resident and practicing in the Society's four counties may be admitted to a supporting membership in the Society.

Drs. Humbert and Jackson were appointed as a committee to draw up a form of this amendment for consideration and debate.

Officers of the Society were elected for 1943 as follows: President, Dr. Pren J. Ross, Grant City; vice president, Dr. William M. Wallis, Jr., Maryville; secretary-treasurer, Dr. Charles D. Humbert, Barnard; delegates: Dr. Charles D. Humbert, Barnard; Dr. Henry C. Bauman, Fairfax; Dr. Samuel E. Simpson, Stanberry; Dr. Pren J. Ross, Grant City.

In the absence of the new President, Dr. Bauman was appointed to complete arrangements for the program for the next regular meeting.

Dr. Andrew B. Jones, St. Louis, delivered a fine and well-presented lecture on "The Diagnosis and Treatment of Psychoneuroses and Mild Depression," richly informative and of much practical value. He gave excellent accounts of the patterns of symptoms developed in the psychasthenias, hysteria and the anxiety state, with particular attention to the numerous instances of these entities that appear in every walk of life, and to the baits with which the pseudo-medical cults entice them into submitting to bizarre and whimsical therapeutic measures.

Mr. McIntyre, Acting Executive Secretary of the Missouri State Medical Association, gave, by invitation, an account of the discussions had at the Conference of State Secretaries and Editors at the American Medical Association's headquarters, with references to the medical problems of military, civilian and industrial affairs.

At 11:30 p. m. the meeting adjourned on motion until February 1, 1943.

CHARLES D. HUMBERT, M.D., Secretary

SIXTH COUNCILOR DISTRICT

A. J. CAMPBELL, SEDALIA, COUNCILOR

The Sixth Councilor District held a clinic session in connection with the Postgraduate Committee of the State Association at Hotel Ruff, Marshall, the evening of December 15 with a fair number of physicians in attendance. The attendance would doubtless have been much larger had the weather remained good.

A social hour was enjoyed preceding a dinner at 7:00 p. m., following which Dr. W. K. Nix, president of the Saline County Medical Society, welcomed the doctors of the Sixth District to Marshall, and turned the meeting over to the presiding officer, Dr. A. J. Campbell, Councilor of the Sixth District. Dr. Campbell complimented the doctors present on braving the inclement weather and expressed his regrets that bad weather probably had kept many physicians from attending the meeting.

Dr. H. L. Kerr, Crane, President of the State Association, then made an interesting, instructive talk touching upon a number of important subjects.

Dr. W. A. Bloom, Fayette, Chairman of the Council, was introduced and gave an interesting talk on the benefits to be derived by the public by the Community Health League, stressing the importance of membership in the League.

Dr. Joseph H. Hardy, St. Louis, gave a most enlightening address on "Toxemias of Late Pregnancy," covering the subject ably and efficiently.

Dr. Arthur Wright Neilson, St. Louis, gave an instructive and brilliant address on "The Five Day Treatment of Syphilis," showing numerous pictures on this ancient disease.

Dr. M. L. Gentry, from the State Board of Health, gave an interesting talk on maternal welfare, followed by numerous questions by the doctors present, showing their interest in this important subject.

Dr. R. W. Kennedy, Marshall, chairman of the local committee on arrangements, gave a short talk which was followed by the closing talk of the evening by Mr. Raymond McIntyre, Acting Executive Secretary of the State Association, who gave an interesting talk on suggested changes that might be advantageously made

in *THE JOURNAL* and urging the cooperation and loyal support of the membership in the publication of *THE JOURNAL*.

With complimentary expressions of the program, the meeting was adjourned at a late hour.

Those present at the meeting were Drs. H. L. Kerr, Crane; A. W. Neilson, Joseph A. Hardy, Jr., and Mr. Raymond McIntyre, St. Louis; Drs. G. A. Aiken, W. M. Bickford, R. C. Haynes, L. S. James, R. W. Kennedy, C. L. Lawless, John R. Lawrence, F. L. Maples, W. K. Nix, S. P. Simmons, Marshall; W. E. Bess, James, W. Boger, A. J. Campbell, Alfred E. Monroe, Sedalia; W. A. Bloom, Fayette; L. M. Garner, Higginsville; M. L. Gentry, Jefferson City; H. A. Hite, Green Ridge; S. L. Johnston, Concordia; W. E. Martin, Odessa; C. A. McBurney, Slater.

Johnson County Medical Society

The Johnson County Medical Society met at Warrensburg on November 25. Those attending were Drs. L. J. Schofield, O. H. Damron, John T. Anderson, W. R. Patterson, R. F. McKinney, R. Lee Cooper, Warrensburg; Odus Liston, Oak Grove; R. C. Schooley and W. E. Martin, Odessa; E. L. Johnston, Concordia; L. M. Garner, Higginsville; Lt. Lee Rosebrook, medical officer at the Knobnoster Air Field.

Dr. Ralph S. Casford, Kansas City, presented an address on "Coronary Thrombosis," illustrated with lantern slides.

L. J. SCHOFIELD, M.D., President.

EIGHTH COUNCILOR DISTRICT

WALLIS SMITH, SPRINGFIELD, COUNCILOR

Greene County Medical Society

The Greene County Medical Society held a joint meeting with the staff of O'Reilly General Hospital at the Red Cross Building, Springfield, at 8:00 p. m., on December 3. One hundred ninety-five were in attendance.

The following program was presented:

"Addison's Disease," presented by Capt. William E. Leede, M.C., and Major H. P. Hampton, M.C.

"Rheumatic Fever," illustrated with lantern slides, presented by Capt. Walter F. Kammer, M.C., and Capt. John F. Giering, M.C.

"Herniated Nucleus Pulposus: The Common Cause of Low Back Pain and Sciatica" with motion pictures and slides, presented by Major Francis E. Murphy, M.C., and Lt. Col. William M. Krigsten, M.C.

At the close of the meeting refreshments were served in the Officers' Mess Hall, Building 84, and a social hour followed.

It was agreed generally that this was one of the most instructive and best presented programs of the year for the Greene County Medical Society.

TENTH COUNCILOR DISTRICT

E. J. NIENSTEDT, SIKESTON, COUNCILOR

Scott County Medical Society

The Scott County Medical Society met in the Public Library, Sikeston, December 2, with Dr. G. W. H. Presnell, Sikeston, presiding.

The following officers were elected: President, Dr. G. W. H. Presnell, Sikeston; vice president, J. A. Cline, Oran; secretary, Dr. W. O. Finney, Chaffee; board of censors, Drs. E. J. Nienstedt, Sikeston, A. A. Mayfield, Sikeston, and G. A. Sample, Chaffee.

The dues of three members who are in military service were remitted. They are Drs. M. G. Anderson, A. D. Martin and H. B. Throgmorton, Sikeston.

A letter from the State Board of Health regarding medical care of the wives and infants of noncommissioned men in service was read and approved.

W. O. FINNEY, M.D., Secretary.

BOOK REVIEWS

A HANDBOOK OF ALLERGY FOR STUDENTS AND PRACTITIONERS. By Wyndham B. Blanton, M.A., M.D., Litt.D., Professor of Clinical Medicine and Chief of the Immunology Clinic, O.P.D., Medical College of Virginia, Richmond, Virginia. Springfield, Illinois, Baltimore, Maryland: Charles C. Thomas. 1942. Price \$3.50.

The author states in the preface, "The material which constitutes this book, a condensation of the subject of allergy as taught and practiced today, has been assembled to meet the needs of busy students and still busier practitioners of medicine." This has been accomplished in 190 pages of easily read type in an exceedingly attractive format.

Part I describes the fundamentals of allergy, and the differences between anaphylaxis and allergy are clearly presented. The causes of allergy are discussed in Part II by a brief description of inhalants, of ingestants, of absorbents, of injectants, and of contactants. In Part III the results of allergy are discussed by describing the clinical situations resulting from its effect upon the nose and adjacent mucous membranes, upon the bronchi, upon the skin, upon the stomach, intestines and upon other structures that may act as shock organs. The appendix contains such miscellany as the preparation and maintenance of a dust free room, outlines for various trial diets and the material used for routine patch tests.

The paucity of references to the literature is compensated at the end of the book by a list of reference books on general allergy. It is a satisfactory handbook for students and practitioners, but a handbook is not the place for controversial subjects so that one is compelled to point out that the inclusion of clinical entities not yet fixed in the allergic scheme and the too frequent mention of the leukopenic index as a diagnostic measure will lead to erroneous inferences.

MANUAL OF DERMATOLOGY. Issued under the Auspices of the Committee on Medicine of the Division of Medical Sciences of the National Research Council. By Donald M. Pillsbury, M.D., Marion B. Sulzberger, M.D.; and Clarence S. Livingood, M.D. Philadelphia and London: W. B. Saunders Company, 1942. Price \$2.00.

The authors have written an excellent small pocket-sized practical manual stressing the diagnosis and treatment of the common skin and venereal disorders encountered in the Army and Naval services. The 383 pages are packed with detailed instructions, tables and rule of thumb methods for handling the usual dermatoses.

Mention should be made of the eighty-three prescriptions listed in the appendix which the writers have found useful. The indications for their application add much to the value of the manual as a guide. The majority of the photographs and diagrams are also excellent and well chosen. N. T.

MEDICAL PARASITOLOGY. By James T. Culbertson, Assistant Professor of Bacteriology, College of Physicians and Surgeons, Columbia University. Morningside Heights, New York: Columbia University Press. 1942. Price \$4.25.

The book is written by the author of "Immunity Against Animal Parasites." It is an excellently organized and systematic presentation of the subject, yet published in a small volume. The contents are up to date and accurate and are full of necessary information to medical students and physicians.

The book begins with an introduction followed by general considerations including injection, epidemiology, immunity, diagnosis, specific therapy and prophylaxis.

laxis. Each species of protozoa, helminths and arthropods of medical importance is then taken up in concise and practical manner, not omitting most of recent advances in the field of medical parasitology. The plates are excellent and prove to be a definite addition to its practical value. Insertions of case reports is an innovation which is both instructive and useful. Though omissions and errors are very few, the reviewer may suggest the following points: (1) additional footnotes of references to important contributions cited; (2) dosages of chemotherapeutic agents, and (3) additions of colored plates for malaria plasmodia and parasitic ova. These additions will enhance the value of the book in the next edition. There is an error in illustration appearing on page 97, in which blepharoplast is represented as a collective term for kinetoplast and parabasal body.

The book is highly adequate and comprehensive. The author is to be congratulated upon this excellent and timely work.

H. T.

THE MIND AND ITS DISORDERS. By James N. Brawner, M.D., Medical Superintendent, Brawner's Sanitarium, Smyrna, Ga. 223 Courtland St., N.E., Atlanta, Georgia: Walter W. Brown Publishing Company. 1942. Price \$3.50.

This volume is rather an outline covering mental reactions as related to cerebral functions, the psychoses, the psychoneuroses and neuroses, the psychopathic personalities and various related conditions. It is stated that the work is intended for general practitioners and these will find it interesting but would probably do better to get one of the leading current textbooks on psychiatry.

L. B. A.

DOCTORS OF THE MIND. The Story of Psychiatry. By Marie Beynon Ray. Illustrations by Ruth Ray. Boston: Little, Brown and Company. 1942. Price \$3.00.

This book as the title indicates is an account for the lay reader of psychiatric knowledge from the function of the brain to the most modern methods of treatments. It is well done, accurate and extremely interesting. There are many details that even the specialist will find novel unless he happens to be particularly well informed and all other physicians should read the book for information of general interest which it will supply them. Their patients too and most lay readers will find it entrancing. It is an excellent selection for a gift.

L. B. A.

ALCOHOL ADDICTION AND CHRONIC ALCOHOLISM. Edited on Behalf of the Scientific Committee of The Research Council on Problems of Alcohol. By E. M. Jellinek. New Haven: Yale University Press. 1942. Price \$4.00.

This amazing work, one of the projected three volumes, is an exhibition of great scholarship. The task undertaken was to digest all of the worthwhile articles extant on the subject of alcoholism. The sponsor is The Research Council on Problems of Alcohol, Karl M. Bowman, Chairman, and E. M. Jellinek, Vice Chairman. The present volume of 338 pages covers the scope of the subjects, alcohol addiction and its treatment, alcoholic mental disorders, vitamin deficiencies in chronic alcoholism, alcoholic encephalopathies and nutrition, Machiavava's disease and cirrhosis of the liver, as well as long bibliographies. The task is extremely well done; one is surprised that doctors should have such excellent literary ability.

But, one wonders, why all the labor and expense? In the end little more is gained than any intern could pick up during a year in a psychopathic institution. The chief problems of alcoholism are not scientific but those of human frailty. Ninety per cent of them would vanish overnight if the whipping post were revived. But what would the psychoanalysts say about that?

L. B. A.

CLINICAL ANESTHESIA. A Manual of Clinical Anesthesiology. By John S. Lundy, B.A., M.D., Head of Section on Anesthesia, Mayo Clinic; Professor of Anesthesia, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, etc. With 266 Illustrations. Philadelphia and London: W. B. Saunders Company. 1942. Price \$9.00.

This is a most complete work on the relatively new field of anesthesiology. All types of anesthesia are described including two comprehensive chapters on local and regional field blocks and nerve blocks, a subject often neglected in discussions of anesthesia. A discussion of the new continuous spinal technic is included in the chapter on spinal anesthesia. The chapters on volatile and gaseous anesthetic agents are shorter than one might expect but, on examination, the material is seen to be quite compact, all necessary points on technic, dangers, precautions, pharmacologic actions, premedication and unusual points of interest being discussed.

One chapter is devoted to intratracheal anesthesia, including a description of types of tubes and technics used in both usual and unusual cases. Intravenous anesthesia is treated quite completely as to technic in usual and unusual cases, and treatment of numerous complications which may arise. There is a long and instructive chapter on choice of anesthetic agents and methods with relation to numerous physiologic conditions and types of operations, which is summarized in a table taking into account complications from Addison's disease and age to hot weather.

Other chapters not seen often in a discussion of anesthesia describe preoperative and postoperative care in considerable detail, a field too often neglected in consideration by the anesthetist; chemistry of analgesics and general and local anesthetics; intravenous therapy and resuscitation. There is also a description of the types of anesthetic records used at the Mayo Clinic and a summary of the work of the Section of Anesthesia from 1924 to 1940.

Of historical interest is a quite complete chronologic summary of events relating to anesthesiology and allied subjects. Altogether, this is a book which fills a place long left vacant for a comprehensive discussion by an American anesthetist of all phases of anesthesia, including the most recent advances that have been made in technics and new anesthetic agents.

E. H. G.

DISEASES OF WOMEN. By Harry Sturgeon Crossen, M.D., F.A.C.S., Professor Emeritus of Clinical Gynecology, Washington University School of Medicine; Gynecologist to the Barnes Hospital, St. Louis Maternity Hospital and St. Luke's Hospital, etc., and Robert James Crossen, A.B., M.D., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine, Assistant Gynecologist and Obstetrician to the Barnes Hospital and the St. Louis Maternity Hospital, etc. Ninth Edition, Entirely Revised and Reset. With eleven hundred twenty-seven Engravings, including forty-five in Color. St. Louis: The C. V. Mosby Company. 1941. Price \$12.50.

This, the ninth edition, has been prepared and written with the usual care and exactness in detail that has made the previous editions of the book by these authors outstanding. Although it seems at the outset that this would be the product of different authors, that lack of similarity to previous editions is occasioned by the concurrent handling of anatomy and physiology of the pelvic organs. This treatment with all the new and detailed and to a great extent highly scientific knowledge that has been accrued, has called for and appropriately used many diagrammatic sketches, schemes, interpretations and many of the usual types of illustrations. The opening chapter is an instructive one and will be referred to in many instances for a beam to follow in un-

derstanding the complex material of the physiology of the pelvic organs and the endocrine glands.

The chapter relating to examination and diagnosis is a good one and has nearly always been considered standard in the gynecologic field. Many new illustrations have been added and great care has been used in stressing the importance of the various types of gynecologic examinations and the pitfalls into which hasty and unsystematic procedures may lead one. The chapter on gynecologic treatment measures is quite inclusive and gives valuable reference data for use of all of the gonadatropic hormone preparations. The diseases of the external genitals and the vagina are discussed thoroughly with the detailed discussion of trichomonas vaginitis and monilia infection, two conditions which are so widespread and cause so much disability and the nature and treatment of which are so frequently misunderstood. The chapter on relaxations and fistulae portrays the anatomy of the pelvic floor and what repair attempts to bring about. The author's technic for care of relaxation of the pelvic floor and for complete laceration of the pelvic floor is well illustrated. The consideration of fistulae describes the various types of fistulae and their treatment. The chapter dealing with displacements of the uterus includes rational discussions of the uterine supports and the part they play in the production of displacements. The methods of diagnosis of various types of displacements are detailed and much to the point and are illustrated with instructive sketches.

The chapter dealing with inflammatory and metabolic disturbances of the uterus is complete and beautifully illustrated with photomicrographs, actual photographs and diagrammatic sketches. It includes a thorough consideration of conization, a popular and successful treatment for removing the diseased glandular tissue of the cervix; also an alternative method of removing the same tissues by conical excision is illustrated. The chapter devoted to non-malignant tumors of the uterus, aside from the clinical considerations and diagnosis and treatment, deals extensively with gross and microscopic anatomy and in detail covers all the usual possibilities of location and complications that may be encountered when tumors are present. The chapter, "Cancer of the Uterus," has a great deal of appeal by its wide scope. The various clinical stages of carcinoma of the cervix are discussed together with a thorough study of the gross and microscopic pathology. The various types of treatment are considered with the indication and advantages of each. In considering carcinoma of the body of the uterus all of the most recent accepted information pertaining to the treatment with the original ideas of the author are included. "The Acute and Chronic Pelvic Inflammations" gives much information to refresh anyone's mind on the condition, its diagnosis, accepted treatments and sequelae. The diseases of the fallopian tubes and pelvic peritoneum are discussed amply and sound suggestions for diagnosis and treatment are given. The chapter relating to diseases of the ovaries includes the classification of the diseases of those structures. A complete and profusely illustrated consideration of the treatment of the growths and microscopic pathology is included. The chapter describing malformations in the genital organs is important for its reference value for many of the conditions. "Menstrual Disturbances" is an important chapter for the practitioner as well as the student. It gives the student an idea of the complexity of the function, the many manifestations of altered function, practical knowledge and effective treatments. In the chapter dealing with sterility and sexual disturbances the problem of sterility is handled adequately and includes what the minimum requirements are for a satisfactory sterility investigation. No doubt at a later time, more definite information on the actual time of ovulation will be forthcoming which will increase the possibility of conception a great deal in the obscure case. The chapter on miscellaneous disturbances is a complete discussion of the climaterium and the meno-

pause. The portion dealing with various breast conditions is helpful and gives information that is not readily at hand. The remainder of the book discusses many of the often neglected points in gynecologic diagnosis and treatment; namely, the relationship of the lower intestinal tract to the pelvic diseases.

A good routine for abdominal and vaginal section is outlined with points of safety and the methods that have proved valuable to the author and his many students. Perhaps there is no field of medicine so abused as the postoperative care in gynecologic patients. The text gives a comprehensive, instructive and up-to-date method of handling the normal as well as abnormal postoperative conditions. Although the medicolegal points in gynecology were left to the last, it was probably done to impress its importance and remind the practitioner of his obligations to patient, husband, others and, also, to be more alert in his own protection.

This edition of "Diseases of Women" is a most valuable one; to the student as a detailed text to follow in making a thorough examination as a source of general information in pelvic anatomy, physiology, gross and microscopic pathology and in appropriate treatment. Endocrine conditions are discussed thoroughly and this book will give the student a basic knowledge in this complex phase of gynecology. To the general practitioner, this book will be of inestimable help in keeping abreast of the most recent ideas on gynecologic physiology and the appropriate treatment of its abnormalities. It will be of great value to that same physician as a reference book in his few cases of obscure pelvic disease and developmental abnormalities. The book, to be sure, could be read from cover to cover with great help to anyone in general work or specializing in diseases of women. The wealth of information and experience embodied in it is stupendous and the time and effort put into preparing this book must have been great when one considers the material both in the form of personal experience and the published literature that had to be considered, analyzed, and the worth-while reduced to pleasantly, readable form. O. S. K.

THE EYE MANIFESTATIONS OF INTERNAL DISEASE. By I. S. Tassman, M.D., Associate Professor of Ophthalmology, Graduate School of Medicine, University of Pennsylvania, Philadelphia; Attending Surgeon, Wills Hospital, Philadelphia, Pa. With 201 illustrations including nineteen in color. St. Louis: The C. V. Mosby Company. 1942. Price \$9.50.

This is a most useful and timely book. The first six chapters deal exclusively with ophthalmologic conditions, the eye, the orbit and the adnexa, their anatomy and physiology, and their local pathologic responses to injury, inflammation and infection. These first six chapters also discuss congenital and developmental abnormalities of the eye, methods of examination of the ocular functions and structures and diagnosis of ocular effects. The following seventeen chapters consider all the non-ocular disorders, not only internal diseases which are capable of causing secondary disorders in or around the eyes but also the infections and infectious diseases with especial attention to syphilis and tuberculosis, virus and fungus infections, focal infections, parasites, drug and chemical poisoning, diseases of the blood, heart, vessels and kidneys, disorders of metabolism and nutrition, diseases of the nervous system including intracranial tumors and diseases of the skin and bones all in their relation to ocular complications.

This formidable list is not too confusing or difficult to read. A short but clear description is given of each extra-ocular disease, symptoms, course and prognosis, followed by consideration of the possible ocular manifestations with their diagnosis and treatment. The purpose of the book is well accomplished and it will be of great value to both the general practitioner and the ophthalmologist in many cases of doubtful diagnosis.

R. J. C.

THE JOURNAL

OF THE

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SYMPOSIUM ON CONSERVATION OF EYESIGHT

THE EYES IN SCHOOL YEARS

W. L. POST, M.D.

JOPLIN, MO.

The child in school, as a rule, is using his eyes more intensely than he will in later life and this while still in the years of rapid growth. Rapid growth has as a corollary soft easily molded tissue. Because of this, eye care should be particular. I do not mean burdensome nor necessarily extensive, merely adequate to recognize the danger symptoms, provide safeguards against abuses and short concise instruction on the proper eye health procedures.

The consideration of the student's eye care can be classified into four broad and interlocking categories: (1) function, its preservation or improvement; (2) accident prevention; (3) disease and its effects and, (4) safeguards to the first three.

Functional eye disturbances include not only disturbances of vision but disturbances of binocular coordination and the effects ill health may have upon both. Presuming that the child has had a careful preschool examination with cycloplegic, the school life starts upon the highest eye function level possible for that particular child. Defects will have been remedied or will be compensated for by an understanding with the school authorities or by admission to a sight-saving class if available. It should be emphasized that large type sight-saving textbooks and typewriters can be secured by purchase or in case of books by loan even if a sight-saving class is not available. The school authorities or the state board of education or superintendent of schools can provide information on this. A system of tutorage for study and recitation with the class can be worked out for any child when there is available an interested teacher plus an adult or older child with patience to read and explain the lesson. The public libraries often have

or can secure through the National Librarians Association a list of books printed in larger than normal type. Elderly people find this service helpful if they know about it. Also, an inquiry to the National Society for the Prevention of Blindness is certain to bring a courteous and accurate solution to the problem.

Presuming the child enters school with preschool tests showing no defect, the rest of the eye life can not be presumed to be free of trouble. Certain disturbances may arise later that cannot be tested for early in life. Convergence power is an example of the latter. This power should be sufficient to hold the eyes on close focus binocularly for prolonged periods of reading. Accommodation also must be sufficient for prolonged effortless near focus. An exhaustion of either weakens the other. Associated there are fusion defects, color perception defects and certain extra-ocular muscle defects that may or may not show in the preschool examinations. Vertical muscle imbalances are particularly difficult to find in a young child even though he is cooperative and they are likely to be the basis of marked discomfort or function upsets. The power to drive an inherently inadequate accommodation or convergence musculature without producing discomfort varies with the health as well as the extent of the defect. Many extensive defects give no trouble when balanced by exuberant health or a proper psychic evaluation while minor defects may give marked trouble in the presence of ill health or certain psychic states, especially with the type of mentality that regards all standards as fixed and a hair's breadth deviation from that as a matter of grave import. This psychology is not infrequently encountered before high-school age. Chronic illness,

anemia and the low vitality states associated with nutritional or glandular disturbances all contribute to eye inefficiency and discomfort in eyes with no refractive error nor muscle imbalance.

Inefficiency and discomfort are the two symptoms most likely to show that there is abnormal function of the eyes. These symptoms may not be clearly apparent as such so must be watched for and any complaint or unusual performance interpreted in the light of a possible accommodation-convergence defect. I prefer this name to the more frequently used term, "refractive error," because it is more descriptive. The child may complain of headache or eye ache when reading but is likely to be more vague in describing symptoms. He simply may avoid reading or any form of near work or, if attempting close work, may be so clumsy that he earns undeserved criticism. In reading, there may be the tendency to repeat, stumble or lose the place with simple words or from the end of one line to the beginning of the next. Head tilting is one of the signs of extra-ocular muscle trouble. Close holding of reading material is of course a primary sign of myopia, although habit, excessive farsightedness or astigmatism all are frequent causes of the same symptom. Remember it is natural to try to see by bringing the object closer. Constant observation by the parents and teacher coupled with periodic use of screening tests are needed. Of course a yearly complete test under the supervision of an ophthalmologist is desirable but economically possible to only a few.

The parents can well be guided by their own eye history and that of other members of their family as to what to expect from their children's eyes. The family physician has a grave responsibility to potential parents when there are familial defects, to inform them that the same defects may, or rather are likely, to appear in their offspring in the same frequency that they have in the ancestors. Nothing is more discouraging than to see an entire family of visual defective children brought into a world in which their lot never can be more than to be on the economic fringe if not to be actually in the depths of want. Of the lesser defects, frequently familial myopia ranks high in occurrence. It makes

its appearance usually during school life. In my experience, it most often starts in the early teens, in the "shooting up" time of growth, frequently around 8 years of age and occasionally not until the late teens. At the later age it definitely seems associated with excessive study. Apparently the defect stabilizes itself around the twentieth year of life except in the "gravida" cases which fortunately are rare. Other familial defects can be expected; for example, familial cataract is found not infrequently now that the corneal microscope is in general use. Small opacities can account for a vision of only 20/40 but the child must be co-operative for these small opacities to be found.

An important function that the school health nurse can perform is to give periodic warning of the dangers of accidents to the vision. The medical profession, especially ophthalmologic societies, can give needed publicity to the prevention of eye accidents. The effect of disease on eye health and function should be emphasized in hygiene lectures and the warning given that the eyes should be used sparingly during acute illness and that chronic debilitatory illness will cause eye muscles and retinal elements to tire easily. The warning should be given to young girls that improper diet or insufficiency of the proper foods may cause eye defects and to young men the special warning should be given concerning the effect of venereal disease to vision. These hygiene lectures must be given with careful consideration of the dangers of making impressionable children hyperconscious of insignificant symptoms. The importance of adequate vitamin intake must be stressed, not only for present distress avoidance but as laying the foundation for good middle age and old age function. If the eyes are used for long periods of time, the student well can be instructed to take regular rest intervals when the eyes are relaxed and focused on infinity. Looking in the four cardinal directions will relax any extra-ocular muscle spasm and stimulate the ocular circulation.

I have endeavored to keep this discourse away from a treatise on specific methods. I hope that this general discussion will be stimulatory to thought on the part of all who advise parents.

Frisco Building.

PROBLEMS OF THE EYES IN THE AGED

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SPRINGFIELD, MO.

In the past, when a patient was of advanced years, the average physician failed to make a complete analysis of the possibilities of the case. "This is a condition of senility," the physician said, thereby excusing to the family and to himself his submission to a sense of futility.

But that was yesterday. Today marks a transition from that period of neglect of the old person

to one of great concern over his problems. This change has come partly because the average period of life is longer under improved health conditions and there are proportionately more old people in the population. At present this greater concern for the older person is due partly to the importance that war is giving to the older man. The young man and his father are in the armed forces and the

grandfather is returning from retirement to assume urgent responsibilities and that his health and all his faculties be conserved is of the utmost importance.

Aroused to the needs of the aged, science is accepting the challenge with enthusiasm. Reports of laboratory and clinical work in this field are being published currently in journals of every language. One has only to read the names of institutions that have sponsored some of these publications to realize the weight that is accorded to this new branch of medicine. The University of Pennsylvania at its 1941 Bicentennial presented a symposium on "Medical Problems of Old Age";¹ the Josiah Macy, Jr., Foundation sponsored Cowdry's book, "Problems of Ageing,"² which contained the views of twenty-six leading medical men, and important material is being published by the United States Public Health Service which has organized a unit of gerontology for research in some of the problems of aging.

This literature on geriatrics stimulates such questions as: Are the degenerative conditions of old age due to physiologic retrogression or are they the end results of disease? What role do the endocrines play in the process of aging? What is the importance of vitamins in the prevention of old age and in the treatment of diseases of the aged? What are the results of surgery on patients of advanced age?

SENILE DEGENERATION

The eye like every other organ suffers from senile degeneration. It is observed most commonly in the arcus senilis of the cornea, the lens changes and the senile chorioretinal degeneration. Therefore, to the oculist there is great significance in the suggestion that the so-called senile degenerations may not be due solely to old age but rather may be the consequences of infections, poisons, improper diet, overwork and strain to which the tissues of the body have been subjected for many years. If this be true, there is a possibility of reducing these conditions hitherto considered inevitable. Their treatment necessarily will lie in the field of preventive medicine, demanding complete physical examinations at regular intervals, the early removal of all foci of infection and education as to diet and the avoidance of fatigue and nervous strain.

ENDOCRINES

Scientists ask and would like to answer such questions as "Are the adrenals, thyroid and other glands made relatively inactive by diet deficiency, and are some of the phenomena of old age the result of such inactivity?" But the problems have not been solved and, so far, endocrine therapy has failed to defer the infirmities of old age.

That rats can be made to live 10 per cent longer by feeding them diets rich in vitamin A, riboflavin, and calcium was shown by work done at Columbia University.³ This, it would seem, can be applied with advantage to human beings.

Vitamin therapy offers the same advantages in the treatment of aged patients that it does in the

young patients. Vitamin A is known to reduce susceptibility to eye infections, especially corneal ulceration, and to prevent night blindness. Thiamin chloride is of value in toxic amblyopia and other forms of optic neuritis and riboflavin in rosacea keratitis. Cevitamic acid tends to prevent hemorrhages in the eye caused by capillary fragility and therefore is indicated in the treatment of recurrent retinal hemorrhages and before intra-ocular operations to prevent postoperative hemorrhage. This form of therapy, however, is still in its infancy; each year adds to the indications for the use of vitamins already known and to the isolation of new vitamins.

SURGERY IN THE AGED

Brooks, in his paper on "Surgery in Patients of Advanced Age,"⁴ presented the results of operations on 293 patients who were more than 70 years of age. He observed that deaths in this group that could be attributed to the operative treatment were infrequent. Alexis Carrel found that the older the patient, the slower the healing process. In spite of this, it is the opinion of Brooks and others that with the best possible preoperative and postoperative management, properly controlled anesthesia and skillful operative technic, the response to surgery in the aged patient is good and they believe that old age is not a contraindication to surgery. It would follow, therefore, that no patient should be deprived of the benefits of surgical treatment of an eye condition because he is old.

CONCLUSION

Ophthalmology, the same as other specialties, will reap great benefits from the advances now being made in the field of geriatrics.

513 Holland Building.

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A request by the directing board of the Procurement and Assignment Service for physicians over the age of 45 to volunteer for service either in industry or in overpopulated areas is published in *The Journal of the American Medical Association* for December 26. The request follows:

"The directing board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians wishes immediately the name of any doctors who is willing to be dislocated for service, either in industry or in overpopulated areas, and who has not been declared essential to his present locality. This is necessary if the medical profession is to be able to meet these needs adequately and promptly. Any physician over the age of 45 who wishes to participate in the war effort in this way should send in his name immediately to the state chairman for the Procurement and Assignment Service in his state."

GLAUCOMA AND CATARACT

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The most important consideration for the general practitioner to keep in mind with reference to glaucoma is that there is such a disease; that this disease causes blindness and that this blindness is preventable in the vast majority of cases if the diagnosis is made fairly early in its course and appropriate treatment instigated and continued.

There are two types of glaucoma, acute and chronic. The acute type is relatively infrequent compared to the chronic form, and the severe pain usually drives the patient to the ophthalmologist directly or indirectly at once. However, a delay in correct treatment of even a few days usually results in blindness of the eye involved, whereas prompt attention will, as a rule, result in retention of useful vision.

In chronic glaucoma symptoms may be slight or entirely absent in the early stage. The vision is normal or nearly so. The patient may complain that glasses are not quite satisfactory. They may have occasional eye pain in dim light, after movies or in emotional stress. Tension is apt to be normal during the day but may be higher after provocative tests, such as taking tests before and after patient is kept in a dark room for an hour. The fields are usually normal or nearly so as are the cornea, pupil and optic nerve. The anterior chamber may be slightly shallow. Diagnosis is most desirable at

this stage but for obvious reasons not often made.

Later, but still fairly early in its course, vision may not be satisfactory to the patient. Refraction does not bring vision to normal acuity. Headaches or eye pain are more apt to be present. Halos around lights may be noticed subjectively. Fields usually are reduced a small amount or may be moderately large. Tension by tonometer usually discloses at least a moderate elevation. The pupil is apt to be slightly larger and sluggish. Even at this stage a great deal usually can be done for the patient; namely, useful vision prolonged for years or permanently.

The general practitioner should be on the alert for the following subjective and objective symptoms: blurred vision, constant or periodic, eye pain or headaches, especially after emotional strain or movies, halos around lights, a pupil that is slightly dilated or sluggish in reaction to light.

Senile cataract does not have the importance in general practice that glaucoma has, due to the time element, as no harm is done by a late diagnosis. However, the possibility of hereditary cataract should be borne in mind whenever there is evidence of vision being less than normal in a baby or child because early surgical attention is highly important in this condition.

500 Broadway.

INDUSTRIAL ACCIDENTS TO THE EYES

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ST. LOUIS

Industrial workers have an eye accident every thirty seconds according to reports accumulated prior to 1941. This means that there are 120 eye accidents every working hour of the day. Each year there are 100 workers totally blinded and more than 1,000 have lost one eye as results of industrial accident.

With the greatly increased number employed in 1942, the greatly increased hours of labor and the increased fatigue of the workers, how many additional thousands of accidents occurred in 1942?

The war effort must include prevention of eye accidents so that the more than 26,000 workers are not idle every day as a result of a preventable accident.

As only about 20 per cent of these accidents are compensable, it can be seen readily that there is a great financial loss to the worker and to employer. This has been estimated at more than \$10,000,000 per year. Physicians are doing all they can to heal these eye injuries but physicians also should do all they can to instruct and warn the workers and the

management of industry so that these trained and competent workers are not idle as a result of avoidable eye accidents.

The general practitioner has a special responsibility because most of the workers with eye injuries go first to his office. He can treat most of them successfully but there are many that he must refer to the eye physician and recognition of the eye injuries he should treat is most important to the general practitioner as well as to the patient.

Most ordinary superficial foreign bodies can be removed easily. Some good recognized eye antiseptic should be used to prevent infection. If the foreign body is embedded in the conjunctiva or cornea, an anesthesia should be used before attempting its removal. It should not be necessary to stress sterilization of eye instruments before using them on the eye.

Another important point that is often overlooked is to place an eye dressing over the eye, if the cornea has been involved, after using a mercurial eye ointment to prevent infection. One then can be

certain that he did not cause the infection and ulceration should such complication follow. Sometimes a worker objects to an eye patch and one is prone to cater to his wishes.

Contusions of the eyeball are not always simple and careful examination of the iris, lens and fundus should be made. Hemorrhage into the anterior chamber or vitreous can be caused by tears of the iris, choroidal tears or retinal detachment. Rest and the judicious use of atropine are most important in these cases.

Burns of the eyelids and eyeballs require immediate action on the part of the physician and, usually, flushing of the eye with copious amount of water is indicated. This should be done before attempt is made to neutralize the chemical and the neutralizing agent must be weak enough to do no additional injury to the eye. Oftentimes more damage has been done by using neutralizing agents than was done by the original chemical. Anesthetic drops must be used so as to properly cleanse eye burns and to be certain of removing all particles such as sand and lime. I treated a patient some years ago that had had for more than two weeks and still had a piece of mortar as large as a small pea buried in the conjunctiva making the eye more inflamed every day. The boy lost his sight as this lime had made the cornea completely white with corrosion and incrustation.

Various methods have been devised to prevent eye accidents such as goggles of various types, machine guards, face masks, helmets, hoods, shields, revision of manufacturing methods, better lighting, education and administrative supervision. Each of these items could be extended into a complete paper but the physician need concern himself with only a few of them.

Goggles are made in various types suitable for definite work and should be worn for impact, dust, splash, fumes or gases and glare and injurious light rays. Goggles for one type of work are not suitable for other types. Goggles must be serviced, kept clean and replaced or they will not be used by the workmen. Supervision is important or the worker becomes careless. Use of goggles should be mandatory.

Better lighting is needed in a majority of factories and plants. Poor lighting has been recognized as an accident maker. Surveys show that in the printing industry 87.3 per cent of the plants have obsolete lighting systems. Other types of industry have lower percentages, ranging down to the textile plants with only 21.3 per cent of obsolete lighting systems. Poor lighting not only causes accidents but makes heavy inroads into the earnings of a plant. Physicians can assist in bringing about better lighting, thereby conserving the eyesight of the workers and making better profits for the company.

Education of the worker and of the managerial and supervising officers in industrial plants is the greatest phase of conservation of eyesight. The

Committee on Conservation of Eyesight of the Missouri State Medical Association has carried on an educational campaign ever since its inception. This Committee depends upon every physician in the state to assist it in this most important endeavor. Remember that 75 per cent of all blindness could have been prevented. All should work together to prevent any needless loss of eyesight in industry.

Humboldt Building.

SHOULD THE CANCER VICTIM BE TOLD THE TRUTH?

M. G. SEELIG, M.D.

ST. LOUIS

Should the physician tell his patient that he has cancer? Here is a simple, unqualified, unequivocal and unadorned question. The answer may not be always as unqualified as is the query; but it need not be rendered limp and halting by the use of weasel words.* The patient should *not* be told that his disease is cancer except in those uncommon instances in which special circumstances are present or in which his cooperation can be won only by telling him the nature of his disease.

Of course, it requires no special type of reasoning to prove the thesis that withholding such information from the patient occasions the necessity of either concealing the truth or fracturing it. I am, and always have been, aware of the dalliance with truth that is involved in the problem; but, in spite of the plague of an unreasonably tender conscience, and the doubts and distractions attendant upon a fairly rigid code of personal ethics, I have yet never told a patient that his disease was cancer, except in those very few instances in which it was necessary to do so for special personal reasons or in order to shock him into a cooperative state of mind. Of course, the failure to inform the patient does not in itself constitute a complete disregard by the physician of his obligation because he always tells, or if he does not, he always should tell, a suitable relative of the patient concerning the existing state of affairs. If this relative feels, with pressing conviction, that he should tell the patient the truth, there is nothing the doctor can do about it save, possibly, to temper the wind to the shorn lamb by blunting the lash of it with all the skillful, intelligent sympathy that he can bring to bear on the patient.

Nobody has ever been able to convince me that I should inform my patient that he has malignant disease. It is said that the patient wants to know. I have found that this, in general, is not true. Of

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Read before The Barnard Free Skin and Cancer Hospital Conference, December 7, 1942.

*The late Theodore Roosevelt gave currency to the phrase "weasel words," signifying words that destroy the force of a statement by qualifications, just as a weasel ruins an egg by sucking out its contents but leaving the shell seemingly intact.

course, many patients actually do insist upon knowing the truth; but that means neither that they really want to know nor that it is good for them to know. It is said that, sooner or later, the patient will learn the truth. This often happens, but when it does happen, it constitutes a slow seepage of the disturbing information into the consciousness of the patient rather than the sudden bludgeoning process of informing him that he has a disease, advertised at large as the great killer and commonly considered by the layman to be distressingly hopeless or foul or painful. The fact that these concepts so often are false cannot be relied upon to reassure the patient. Those patients who have not been told the truth, and who show a tendency to suspect the threatening state of affairs, show, also, almost invariably, an accompanying inclination to doubt their own unpleasant suspicions and thus to dismiss fears and to allow cheer to neutralize despair so that they may enjoy, at least occasionally and momentarily, happy interludes of hopefulness.

Many consider it the physician's ethical obligation to tell the patient the truth. Such counsel seems to rest on the basis of necessary conformity to so-called medical ethics. Throughout my life, I have been quite busy trying to align my conduct with the principles inscribed on the tablets handed to Moses on Sinai, with the exhortations of the Sermon on the Mount, in general, with the Golden Rule, in particular, and with the formal ethical code governing the practice of medicine. On re-reading the code, in preparation for this dissertation, I found that it maintains a definite and wisely discreet silence regarding the obligation of the physician to tell his patient the truth, the whole truth and nothing but the truth.

I went even further afield in the attempt to square conscience with desire. I sought for the judgments of other men whose opinions should command respect, and I found them. Wise old Dr. Oliver Wendell Holmes concedes that "truth is for other worlds, and hope for this"; Voltaire helps out with: "There are truths which are not for all men, nor for all times"; Emerson, the beloved sage of Concord, says that "God offers to every mind, its choice between truth and repose. Take what you please, you can never have both." "'Tis real humanity," says Lord Chesterfield, "to hide strong truths from tender eyes," and even that arch cynic and satirist, Anatole France, said "I love truth. I believe humanity has need of it. But assuredly it has much greater need still of the untruth which consoles it, and gives it infinite hopes." Sometimes, I wonder if, in my zeal to temper truth with mercy, I may not be motivated subconsciously by the philosophy of Mark Twain as expressed by Pudd'n-head Wilson when he said, "Truth is the most valuable thing we have. Let us economize it."

It is said that circumstances alter cases; that it is not possible to reach a judgment universally applicable to all cancer patients; that individual variants demand highly individualized treatment. Of

course, all this is true. No two things, anywhere in Nature, are identical. Of the countless trillions of maple leaves, no two can be accurately matched—and yet the systematic botanist very properly, and with an almost studied disdain for differences, generalizes in his description of the silver maple leaf as being: "Six to seven inches long, thin, translucent, beautiful and silvery below, the toothing very ornamental; drooping on bright red stalks; pale yellow in Fall." Similarly, with full knowledge of the temperamental variants that characterize humans, one logically may champion the generalization that the cancer patient should *not* be told his disease under all ordinary and not even under many extraordinary circumstances because, preponderantly, the effect of telling him is bad.

There is just one thing that the patient with cancer can do to help himself and that one thing is to submit to treatment by knife, cautery or some type of radiotherapy as prescribed by the physician. Nothing in the way of regimen, whether it be dietary, physiotherapeutic, hydrotherapeutic, climatologic or rest treatment; nothing that he can do by persistent adherence to drug therapy, nothing that he can do other than simply submit to the judgment of his physician can help him. If the patient accepts counsel, submitting to treatment, with full trust in his physician, I fail to see how he is helped by outlining the nature of his disease to him. Of course, if he stands in his own light by refusing treatment, then it becomes a matter of necessity to tell him that he has cancer and that the treatment outlined is a life-saving procedure.

I not only feel certain that, as a general rule, the patient should not be told he has a malignant tumor but, also, I am no less certain as to why he should not be told. The knowledge of cancer and its treatment being what it is, it necessarily follows that, even under the most favorable conditions, the physician can offer no more than an excellent hope of complete recovery. The knowledge of the possibility of recurrence is almost as much a part of the general knowledge of the average intelligent patient as it is a familiar fact to the physician. The patient, therefore, once told of his disease, lives in a shadow of doubt, which, it is true, may thin out in time; but he never escapes from the penumbra of uncertainty because he knows that the disease may recur or "strike in" at some much later date. Suspense being one of the most virulent of the harmful psychologic motivations, one should be willing to go great lengths to avoid the delivery of a sentence of suspense. And one should be willing to go thus far, even when the patient assures him that he wants to know and that, to use his own words, he "can take it." Two very recent incidents will serve to clarify all this. One patient was told frankly by his doctor that his disease was cancer. He was one of those strong minded individuals who seems to have learned that by bluntly facing fate one neutralizes the sting of life, just as one finds security in grasping the nettle boldly. In this in-

stance, radium wrought another of its miracles. After about eight months of follow-up observation, the physician congratulated this well poised patient on his good fortune only to be met with the retort: "How fine it all is, doctor, to know that I am cured; but how much more wonderful it would be if only you could now remove the imaginary cancer that I have started growing in my brain." Another patient was a woman who had worked in a cancer hospital as a skilled attendant upon cancer patients for over a quarter of a century and who should have known almost beyond doubt that she had a cancer of the finger with a secondary growth in her armpit. Nevertheless, when she was suddenly told the blunt truth, she was thrown into a seriously compromising angina pectoris seizure.

It would seem that there is almost resistless force in the argument that if the patient is afflicted with curable malignant disease, and is cured, without knowing that he had the disease, his recovery is unaccompanied by any immediate surges of doubt and worry to plague him; and what is far more important, without any of the more remote haunting fears to serve as perpetually recurrent nightmares throughout his life. Also, it would seem that if, on the other hand, the patient is incurable and is not told that he has the disease, he too is spared both the loss of hope and the ordeal of traveling to his grave down a dark and desolate road, lighted only by what gleams he himself can flash out of his own indomitable, rugged spirit.

Let no one conceive the idea that the easy way for the physician lies in withholding from the patient the fact that he has cancer. Just the reverse is true. The moment the physician takes the patient into his full confidence by telling him that he has malignant disease, that moment the physician shifts the burden from his own mind and thought into the mind and thought of the sick one. Speech then becomes free and unguarded; prognosis may be—indeed it must be—unvarnished; professional conscience is unhampered and unweighted and the ways are well greased for the patient, unassisted, to slide down into the still, deep waters of self-reliance, self-cheer and moral self-support. That is the easy way for the physician. The other way, the way of concealment—the assumption by the doctor of the burden that he unloads from the patient—that is the difficult way entailing as it does more or less violation of the professional conscience, dalliance on the primrose path of truth, a constant guard against disclosure by word or look, the repression of concern and the concealment of doubt. In the language of old Vergil, "*Hoc opus hic labor est.*" But it is a thousand times worth-while for what it spares the patient.

I hope not to be misunderstood as attempting to impose my concepts of duty or truth or conscience on any one else. Indeed, my own ideas are so fluid that, doubtless, they will change just as soon as physicians familiarize a much larger cross section of people with the facts that, under favorable circum-

stances, cancer is a curable disease, that it is not necessarily a painful or hereditary disease, indeed that it is *not* most of the things that people today think it is. All would like to believe that we live in the best of all possible worlds, where the God-of-Things-As-They-Ought-to-Be reigns sleeplessly. All would like to feel assured that the prayer of the poet, William Laird, would evoke a divine response, thus rendering all courageously unafraid:

"Lord, make my childish soul stand straight
To meet the kindly stranger, Fate;
Shake hands with elder brother Doom
Nor bawl nor scurry from the room."

But one cannot reckon on or plan for the conduct of the physician, in relation to the cancer sufferer, without hearkening to another poem by Frances Cornford which leaves no doubt regarding either the mental anxiety of the patient nor, inferentially, of the advisability of avoiding the cause of this mental ill, even at the sacrifice of truth:

"I wakened on my hot hard bed;
Upon the pillow laid my head;
Beneath the pillow I could hear
My little watch was ticking clear.

I thought the throbbing of it went
Like my continual discontent;
I thought it said in every tick:
I am so sick, so sick, so sick;
Oh death come quick, come quick, come quick,
Come quick, come quick, come quick, come quick."

But what shall one say when he is told that the intelligent cancer patient, once he has been informed of his plight, compensates for the reception of the bad news by a resurgence of courage, bolstered in many instances by a calm period of planning to meet the inexorable? In most instances of this sort, one is interpreting only the "front" that the patient is assuming in order to conceal the real turmoil of soul that he suffers. My own experience teaches me that many of these people suffer grievously without any manifest evidence of the mental pain they endure. One does not have to be a profound student of human nature to realize that the average man of parts tends to walk with his head unbowed though bloody. But when I am told that a fond mother or a devoted father, never by word or deed manifested to her or his children or friends the slightest evidence of concern after learning that he or she was the subject of malignant disease, I feel assured that no one knows the stress of mind and spirit behind the seeming aplomb of these brave souls. No one can measure the deeper consequences of the forces of such repression. How well Shakespeare expressed this thought in Banquo's warning to Macbeth:

"And oftentimes to win us to our harm,
The instruments of darkness tell us truths,
Win us with honest trifles, to betray's
In deeper consequence."

NEUROLOGIC ACCIDENTS FOLLOWING SERUM ADMINISTRATION

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The progressively increasing popularity of hypodermic, intravenous and parenteral medication and the multiplicity of biologicals now on the market adapted to these methods of administration in the treatment of various diseases prompts this review of some of the less frequent though profoundly disturbing accidents following this type of medication. At the present time when several million men and women are being inducted into military service and routine immunization against disease is a necessary and important step in safeguarding the health of the combat forces, it might be pertinent to direct attention to these accidents.

Accidents associated with the use of sera have been noted since the beginning of serum therapy. As early as 1894 Roux, Martin and Chaillon discussed this subject at a medical congress in Budapest. Engleman, Gruenberger, Gardere and others in the early history of investigation of these conditions called attention to the various neurologic accidents associated with antirabic and antitetanic prophylactic treatments. In later years the association of neurologic complications following serum sickness has occurred with sufficient frequency to justify consideration.

In 1924, Lucksch¹ discussed at length the neurologic complication of rabies including encephalitis, myelitis, neuritis and ascending paralysis of the Landry type. In the analysis, he also discussed the mortality which was about 30 per cent.

Robinson² called attention to the severity of neurologic complications in reporting a case of peripheral nerve paralysis with foot drop, atrophy and the reaction of degeneration following the injection of typhoid vaccine. He submits a rather extensive bibliography.

Young³ reported a case of palsy with atrophy of the right deltoid following prophylactic injection of tetanus antitoxin with paralysis of axillary nerves, shoulder girdle atrophy and reaction of degeneration in which there was some improvement after three months although the atrophy of the muscles of the shoulder girdle continued. He calls attention to fifty reported cases of peripheral nerve paralysis following the use of serum and to the prognostic significance of atrophy.

Kennedy⁴ reported five cases of paralysis following serum sickness and Wilson and Hadden⁵ also reported a number of cases of neuritis and multiple neuritis following serum therapy. In one such case the development of neuritic symptoms was manifested sixty days after the serum was administered. His report indicates the great variation in time of onset of neuritic symptoms which might tend to confuse the diagnostician.

Doyle⁶ found the incidence in forty-nine cases to be predominately in males. The average age was

26.9 years and the majority of the forty-nine cases reported followed the injection of antitetanus antitoxin. The neurologic complications in the series studied are shown in table 1.

Table 1. *Neurologic Complications*

Superior brachial plexus unilateral motor	13
Mononeuritis (radial and long thoracic)	8
Optic nerve	4
Brachial plexus bilateral motor	4
Brachial plexus bilateral sensorimotor	4
Superior brachial plexus unilateral motor	4
Superior brachial plexus unilateral sensorimotor	4
Superior brachial plexus bilateral motor	3
Superior brachial plexus bilateral sensorimotor	3
Brachial plexus unilateral motor	1
Brachial plexus unilateral sensorimotor	1
Central nervous system meninges, brachial plexus bilateral motor symptoms	1
Urticarial cerebral edema	1
Note the predilection for upper cervical nerve roots anterior and posterior, sometimes only motor roots involved, sometimes both motor and sensory but never sensory without motor involvement.	

Four factors must be considered in evaluating the effect of serum administration: (1) the amount used, approximately 10 per cent of those receiving 10 cc. developing evidences of serum sickness while 75 per cent or more developed serum sickness if 60 cc. or more is administered; (2) the administration of sera less than two months old; (3) sera from certain horses seems to predispose to the development of serum sickness, and (4) the personal equation of the individual as related to his sensitivity.

Thompson,⁷ from the study of these accidents, concluded that children less than 2 years of age are practically immune to neural complications that may follow serum administration although children of school age exhibit about the same predilection as adults. A larger percentage of children of school age are recorded as suffering from these neurologic complications following the prophylactic or other administration of serum, probably because more of this age receive the serum.

It will be recalled that the first cases of paralysis following treatment for rabies were regarded as paralytic forms of rabies and for several years were so classified until paralysis developed in a child that had been bitten by a dog that later proved to be free from rabies and the child was receiving antirabic serum. Thompson called attention to the fact that certain cases of encephalomyelitis are attributable to vaccination and suggested the possible ways in which this complication might occur. He feels that one must assume that the occurrence of these distressing phenomena may be from direct action of the vaccinia virus on the nervous system, the activation of a dormant virus in the host or anaphylactic reaction to the virus with some non-specific factor. He called attention to the fact that no virus other than that of vaccinia has ever been recovered from the brain. He cited an extensive bibliography and quoted the ministry of health reports.

Allen⁸ discussed the problems of diagnosis of these conditions and called attention to the preva-

lence of so-called minor neurologic complications following serum therapy and the long interval sometimes elapsing before these develop. He classified the manifestations in four groups: (1) the radicular, resembling Erb-Duchenne's paralysis acuta; (2) the mononeuritic type involving single nerve trunks; (3) the polyneuritic manifestations that resemble toxic polyneuritis and, (4) the cerebral type such as are attributed to intracranial edema which may occur independently or in association with other neural manifestations.

While accidents involving the nervous system are comparatively rare, the constantly widening field of serum therapy in prophylactic and treatment procedures has emphasized the possible role of these agents in numerous types of neurologic disorders of somewhat obscure etiology. The paucity of etiologic data in many of the neurologic problems encountered leads one to scrutinize closely every possible contributing element.

Whether, as the literature would seem to indicate, there is an absolute increase in the incidence of neurologic accidents following serum administration or whether because of a more critical technic in determining causative factors the apparent increase may be regarded as relative, it remains that serum sickness which occasionally is followed by these neurologic accidents is sufficiently common to be familiar to most physicians. In some instances the time elapsing between the subsidence of the acute manifestations and the development of the neurologic sequelae may be such that the possible association of the two may be obscured.

The urticarial rash, joint pains, headache and vomiting with rise in temperature following serum administration in the sensitized patient may be followed immediately or remotely by evidences of neurologic involvement. Physicians are familiar with the usual anaphylactic reactions such as urticaria, arthralgia, adenopathy and cardiac collapse with the occasional incidence of coma or death but are less conscious of the possible occurrence of nervous complications with their prolonged and seriously disabling effects which at times may have a medico-legal implication. Therefore, it would seem pertinent to review certain related manifestations which would seem to present analogous features.

In the period between 1922 and 1928 the occurrence of neurologic sequelae following the use of vaccines and sera was noted with such frequency in European countries, particularly in England and Holland, that they were regarded as of sufficient importance to warrant a thorough study and a commission was appointed for that purpose. Up to that time 159 cases were studied in England and some eighty odd had occurred in Holland. Scattered case reports appeared throughout European literature during that period and since this study was undertaken a large number of reported cases have appeared in European literature and not a few in medical publications in this country. The report submitted by the English commission was

not conclusive although the similarity of the manifestation to certain phenomena incident to virus infections was noted and it generally was conceded that the specific nature of the antigen was not the factor responsible for the accident but rather a protein sensitivity on the part of the patient. While the anaphylactic picture is not typical, the commission's conclusions are difficult to disprove and are supported by the newer theories relating to the virus infections, i.e., that the neurotropism exhibited is dependent on a conditioning or sensitization of the particular cells attacked, as advanced by Toomey and Weaver.⁹ It is to be noted that the greatest incidence of accidents involving the nervous system occurred from the prophylactic use of vaccines and serums. More of these have been recorded in relation to the use of vaccines than of serum, no doubt due to the fact that the former have been employed for a longer period. Nevertheless, the number of cases reported following the use of sera has increased steadily during the last two years and Marsh,¹⁰ from an extensive review of the literature, concluded that implications involving the central nervous system follow virus infections much more frequently than they follow bacterial disease. Much discussion in recent years as to the exact nature of these sequelae has brought forward various hypotheses. The two that apparently have the most proponents are: (1) anaphylactic reaction and (2) the theory that the injection of the protein activates a latent virus present at all times in the body but which under normal conditions is dormant and innocuous. The proponents of the latter theory base their arguments on the fact that the viruses, so-called, are protein substances present at all times in the human body and pathologic or noxious only in response to some excitant which causes a biochemical change in certain tissue cells which makes them vulnerable to attack and explains the neurotrophic predilection of the toxic agent. This postulation appears to be in harmony with findings of Rivers¹¹ who has written extensively on the subject and who in a recent comprehensive review of the literature arrived at the conclusion that so-called viruses are protein compounds.

Keim and Wakefield¹² have given an excellent review of the literature of paralytic features following prophylactic parenteral medication.

State Hospital No. 2.

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HYPERINSULINISM

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Hyperinsulinism, no doubt, has existed as long as diabetes but it has been recognized only recently. In November 1923, nineteen years ago, I recognized my first case of hyperinsulinism and at that time reported it to the Jasper County Medical Society. At that time it had not been recognized as a clinical entity. During the same year, Dr. Seale Harris reported his first diagnosed case. Since 1923, and particularly since 1930, many reports have been filed in medical literature on many phases of this clinical entity. These reports indicate that hyperinsulinism is a frequent condition. A chronologic review of these cases reported by physicians in various parts of the world has been presented by Dr. Seale Harris.¹

Hyperinsulinism is in direct contrast to diabetes mellitus, the latter being the result of hypoinsulinism. Had it been known that diabetes mellitus was a result of under-production of insulin, it no doubt would have been named hypoinsulinism.

Hyperinsulinism may be defined as a disease of the pancreas or a condition causing excessive secretion of insulin by the islands of Langerhans. Clinically, this produces a hypoglycemia which in turn produces the following characteristic symptoms: hunger, weakness, coldness, sweating, numbness of the extremities, nausea, vomiting, mental apathy and tremors. A blood sugar of 75 mg. per 100 cc. of blood or lower will produce many of these symptoms. A blood sugar materially below 75 mg. per 100 cc. will produce more severe symptoms such as incoordination of movement, diplopia, ataxia and many forms of emotional and mental excitation such as unconsciousness, convulsions, shock, coma and death. Many cases of cyclic vomiting in infants and epileptiform attacks in adults now are explained. Therefore, the clinical and neurologic symptoms are varied.

Hyperinsulinism is responsible for and gives basis of explanation as to cause of many functional nervous syndromes which have been diagnosed in the past, but the cause never satisfactorily explained, such as neurasthenia, muscular asthenia, hysteria, migraine, petit mal, narcolepsy, epilepsy and neurocirculatory asthenia, the latter producing many cardiac symptoms such as tachycardia, bradycardia, palpitation, arrhythmias, extrasystoles, attacks of angina or precordial pain. In addition to these nervous symptoms, this disease entity produces bizarre manifestations in other parts of the body such as respiratory symptoms, especially noticed in different degrees of dyspnea. Other nervous phenomena are a "sinking feeling" of which many patients complain; physical and mental fatigue, irritability, dizziness and vertigo; disturbance and loss of taste and auras of smell are notice-

able in many patients. Therefore, one should be on the alert to recognize some of these symptoms and be able to treat many of these patients who have been dismissed with the feeling that most of their symptoms are purely imaginary with no basis for their continued disability.

ETIOLOGY

Hypoglycemia may result from a number of causes: hypersecretion of the islands of Langerhans, deficient glycogenesis in the liver produced from poisons such as arsphenamine or other arsenicals or other toxic substances, some tumor or damage to the liver, ovarian dysfunction, pituitary dysfunction and hypofunction of the adrenals. The latter condition apparently affects many of these cases. I have had some measure of success in several selected cases in improving the symptoms by administering adrenal cortex.

Hypoglycemia is, therefore, an abnormality of the blood resulting from a dysfunction of one or several organs of internal secretion causing a lowering of blood sugar below normal. Harris² believes that probably the most usual underlying cause of pancreatitis, which sometimes precedes hyperinsulinism, is a diet deficient in vitamins. This opinion has been expressed in literature many times. All understand that the etiology of many diseases is the lowered resistance caused by faulty diet. It has been said that the vitamin-starved Americans, and one must add carbohydrate-fed Americans, are those who live largely on potatoes, white flour bread, pastries, sugar-saturated deserts, with candy and "cokes" between meals. Is it not, then, reasonable that the average American would be prone to become a victim of infection or disease due to an overburdened pancreas resulting in diabetes or hyperinsulinism? It is now proven that the digestion of carbohydrates stimulates insulinogenesis or the over-production of insulin following excessive carbohydrate digestion. Therefore, it is probable that the use of starches and sugars which now make up a large part of the American diet play an important part in the production of hyperinsulinism in many individuals. Worry, overwork, emotional disturbances, prolonged physical exertion such as the modern business world demands and all exhausting the suprarenals and the whole physical body, no doubt play a large part in the causation of this new clinical entity.

PATHOLOGY

In many patients with hyperinsulinism on whom operation has been done, normal pancreases have been found and histologic studies have not shown any pathologic changes. It appears that, as in diabetes, hyperinsulinism may occur without any demonstrable lesion of the pancreas. Some cases of neoplasms of the pancreas associated with hyperinsulinism have been reported.

DYSINSULINISM

Dysinsulinism is an uncontrolled secretion of insulin, excessive at times, resulting in hyperglycemia and alternating with hypoglycemia. In some of these cases the hypoglycemia phenomena is more predominant and in others the hyperglycemia is more predominant. The symptoms of dysinsulinism may be mild, irregular, moderately severe, or so severe that attacks of unconsciousness and convulsions, hypoglycemia, coma and death may occur in patients known to have diabetes. I had one outstanding case of this type. A woman who had been treated for diabetes was referred to me by Dr. McKinney of Baxter Springs, Kansas. She had been in the hospital under my care on a previous occasion for diabetic coma and at a subsequent time following a Thanksgiving dinner which was excessively high in carbohydrates. She developed symptoms of diabetic coma and reentered the hospital. This later illness proved to be hypoglycemia or low blood sugar which was, no doubt, due to insulogenesis, the result of excessive sugar stimulation of the pancreas. The coma deepened and although she was given glucose, her blood sugar did not return to normal and she did not regain consciousness and died on the third day following her admission to the hospital. This patient had acetone which cleared up previous to her death. She never regained consciousness at any time during her period in the hospital and death which followed was similar to that of one who might be in deep shock with profuse sweating, air hunger and tachycardia.

It should be remembered that in patients having hypoglycemia symptoms, fasting blood sugars are not always low; therefore, repeated blood sugar determinations should be made before hypoglycemia is concluded in suspected cases of hyperinsulinism.

PROGNOSIS AND TREATMENT

The prognosis of hyperinsulinism depends on the severity of the hypoglycemia. It is good in the mild cases which are diagnosed and managed if the physician has a cooperative patient. Spontaneous recovery has been known to occur following attacks of unconsciousness and convulsions; however, death usually occurs.

The problem of dieting in hyperinsulinism is similar to that in diabetes mellitus. Each patient must diet to suit his own particular need according to the severity of his disease. It is important that the patient have a sufficient diet to maintain his normal weight and his blood sugar level, properly divided into carbohydrates, proteins and fats. In order to do this, I have found it necessary to feed many of these patients a small amount of food every two to three hours, depending on their symptoms. Improvement in the feeling of well-being in these patients with these symptoms of weakness, excessive fatigue and nervous irritability is surprising. Particularly striking is the change that takes place in the personality of these patients fol-

Table 1. Summary of Present Condition of Patients

1 in poor condition
3 unable to work
5 in good condition
7 in fair condition
10 mentally incompetent
14 dead
4 diabetic
5 unknown
1 coronary occlusion
1 arthritic
—
51 cases

This is a brief résumé of cases reported. These patients have been checked so far as possible in private practice over a period of ten years after the diagnosis was made.

lowing a change in the regimen of diet. In many cases they have gone several hours without food and by mid-morning are completely fatigued. I consider as normal a diet as possible with a moderate increase in the amount of fats and proteins best since a high carbohydrate diet might produce an insulogenesis; in other words, temporarily produce an increase in the blood sugar followed by a rapid fall below normal and below what a small or normal amount of sugar might produce for this particular patient. Therefore, a diet in each case of hyperinsulinism should be calculated to meet the patient's nutritional needs with the vitamin content considered. It is essential that all patients having this disease exercise moderately in their daily life, particularly have physical exercise. Bromides, phenobarbital, belladonna and ephedrine have been used in the treatment of these cases with the idea of the depressing effect on the body functions. In severe cases, especially those associated with epilepsy, there is no doubt but that this suggestion has a basis for its therapeutic value. Adrenal cortex, which was mentioned previously, has been given with apparent good results and I think is worthy of trial in many of these cases.

Surgery has been suggested and has been done in selected cases in which some type of neoplasm of the pancreas is associated with this disease. This, of course, should not be attempted unless the diagnosis is reasonably assured.

In ten years I have had a total of fifty-one authentic studied cases. A short résumé of the results in these patients is given in table 2.

REPORT OF CASES

Case 1. The first case which I diagnosed was in November 1923. This man, an insurance manager, aged 44 years, came to the office complaining of weakness, nervousness and fatigue and inability to concentrate on his work. On physical examination he was normal except for the history that he had been treated for the last five years for diabetes mellitus. His urine revealed a small trace of sugar and strong acetone. The blood sugar test made at this time revealed a blood sugar of 66 mg. per 100 cc. of blood and with subsequent studies, including a Hammond sugar curve, the highest blood sugar was 90 mg. These studies were continued over a long period of time because this was new to me and, although I was sure of the condition which existed, it had not been recognized in medical work and I wondered if my conclusions were correct. However, after these studies, I put the patient on a full-balanced diet and, to my utter sur-

Table 2. Report on 51 Cases

Case Number	Age	Maximum Obtained Blood Sugar With Full Diet	Living or Dead	Condition
1 Mr. W.	44	90	Dead	
2 J. S. G.	55	83.3	Living	Fair
3 Miss H.	24	69	Living	Good
4 Rev. K.	26	69	Living	Good
5 Miss D.	6	69	Living	Fair
6 E. H.	47	83	Living	Unknown
7 N. K. W.	48	69	Dead	
8 Miss G.	61	69	Living	In state hospital
9 Mrs. B.	50	82	Dead	
10 Mrs. C.	38	73	Dead	
11 Dr. V.	55	80	Living	Fair
12 I. O. W.	44	77	Living	Unable to work
13 R. D. D.	62	83	Dead	
14 R. S.	70	71	Living	Diabetic
15 Mr. R.	60	69	Living	In State institution
16 Mr. C.	48	77	Living	Unable to work
17 L. S.	49	74	Living	Mild diabetic
18 Mrs. E.	42	71	Living	Very nervous
19 Mrs. K.	43	80	Living	Nervous and unstable
20 Mrs. K.	40	69	Dead	
21 L. K.	40	69	Living	Nervous and unstable
22 J. H.	65	71	Living	Unable to work
23 F. H.	40	74	Dead	
24 G. C.	16	74	Living	Depressive insanity
25 J. M.	45	69	Living	Good
26 Mrs. H.	72	69	Dead	
27 A. D.	42	78	Living	Nervous and unstable
28 Mrs. G.	68	84	Dead	
29 S. E. H.	70	74	Dead	
30 D. H.	40	69	Living	Fair
31 D. C. W.	48	50	Living	Mild diabetes
32 V. L.	40	69	Unknown	
33 G. J. E.	69	69	Unknown	
34 Mrs. C.	40	69	Dead	
35 N. V.	30	74	Living	Fair
36 Mrs. N.	36	74	Living	Fair
37 Mr. O.	57	69	Living	Coronary occlusion
38 E. A. L.	70	71	Living	Poor
39 Mrs. S.	49	61	Dead	
40 D. W.	19	89	Living	Good
41 Mrs. G.	43	69	Living	Mentally incompetent
42 H. B.	47	71	Dead	
43 Mr. N.	24	69	Living	Mentally incompetent
44 Mrs. C.	70	69	Living	Mentally incompetent
45 G. C.	35	95	Unknown	
46 Mr. B.	38	83	Unknown	
47 Mrs. D.	40	69	Living	Fair
48 Mrs. W.	45	69	Unknown	
49 C. O.	43	60	Living	Good
50 C. G. W.	36	74	Dead	
51 Mr. D.	44	71	Living	Arthritic

prise, his urinary sugar cleared and he became acetone free. His symptoms were relieved completely. I kept this man under observation for a number of years. In about 1930 he developed carcinoma of the rectum and died about two years later with no return of his diabetes or hyperinsulinism symptoms and showed no change in his blood sugar despite the fact that in the latter months of his life he literally starved to death as he had a general involvement with carcinoma of the whole intestinal tract. This latter fact, which later has been reported, was interesting to me for I realized then that fasting did not produce hypoglycemia.

Case 2. A man, aged 55 years, who for many years was engaged in executive work which required a lot of physical and mental energy, came in for examination complaining of weakness and short periods of loss of memory, excessive fatigue, irritability and inability to carry on his work. A physical examination including laboratory work gave essentially normal findings except for a blood sugar of 64.5 mg. Since that time he has had numerous blood sugar readings ranging from 44.4 mg. to 83.3 mg., the latter on January 14, 1940. He has been able to carry on his work with little discomfort and has done more than the average man of his age.

The only treatment which he has had has been thiamine chloride administered on an average of about once per week and an entire change in his diet, feeding him small meals about seven times per day. He is happy and highly pleased with the results. He had had these symptoms for a number of years but, just previous to the time he called at my office, they had advanced to the point at which he was unable to continue his work.

Case 3. A woman school teacher, aged 24, was referred to me by a physician from Oswego, Kansas. For the last year she had had a tired feeling, especially on slight exertion. She had extreme shortness of breath with tachycardia and in the last few months these symptoms had become much worse and had reached the point at which she was unable to carry on her work. Physical examination including basal metabolism gave normal findings. Blood sugar averaged 69 mg. She was put on a well balanced diet with feeding between meals and an increase in the fat and protein content. I have seen her for observation at intervals since that time. She has made a complete recovery, is happy with her work and has no further distress.

Case 4. A minister, aged 26, for eighteen months previous to consultation had been sick and was gradually losing weight. He was weak and tired and when he had had a strenuous day, especially on Sunday, he was totally exhausted after his evening service, and Monday and Tuesday following he had to remain in bed. This had grown steadily worse for the last eighteen months previous to the time I saw him. He noticed that he would have utter fatigue, weakness and short breath with sweating while he was conducting his services on Sunday morning. In questioning him carefully about this, I found that on Sunday he did not eat any breakfast. On other days in the week he had his meals regularly and, although he conducted services with as much strain or effort at the time, he suffered no discomfort. His physical examination gave normal findings except a blood pressure of 100/80. His urinalysis was normal except for a trace of albumin. His blood counts were normal. His blood sugar was 69 mg. and his nonprotein nitrogen was 28.5 mg. After careful study, I decided that this case was hyperinsulinism and, therefore, placed him on a diet which was rich in protein and fats with vitamins and gave him small doses of thiamine chloride. He has made a most excellent recovery. Within a short time he was able to carry on his work without any fatigue or nervousness and is now perfectly happy, having taken on an extra church where he conducts services during the midweek.

Case 5. A little girl, aged 6, had a history of nervousness and complaining of being tired and no appetite. She had had some convulsive seizures of some type. The physical examination showed her essentially normal except for a rapid or simple sinus tachycardia. Her blood sugar was 69 mg. She was given a normal diet rather rich in fats and was given some simple digestant. Her diet was rearranged. After a few weeks her symptoms improved and she had no more convulsive seizures.

Case 6. A man, aged 47, an executive of the telephone company who had been a strenuous worker during his mature years, called for examination. He had never known what it was to be fatigued. He came in with a history of exhaustion, nervousness, irritability and mental dependency. He was unable to continue his work and was forced to resign his position. On numerous occasions his physical examinations revealed normal findings and I never was able to obtain an abnormal physical finding on this man. His blood sugar ranged from 65 mg. to 83 mg. even on the highest carbohydrate diet which I could get him to eat. He continued under my care for many months and, although he has moved to a distant city, so far as I know, he is in reasonable health although I felt that he had considerable mental disturbance and I am still wondering if he will not be one of the patients marked in the records "an inmate in a State Institution" or "dead." Unfortunately

ly all of these cases are not seen early and they do not all respond to treatment and undoubtedly, after a long period of hyperinsulinism, a damage is wrought to the nervous system which no treatment will repair.

Case 7. A salesman, aged 48, had a history of having had several attacks of unconsciousness, extreme nervousness, mental disturbance and difficulty in concentration. He had lost 20 pounds in weight in the last six months and all of his symptoms had been accentuated during that time although he had had some of them for the last five years. His examination and laboratory reports were all essentially normal except that the urine had a number of pus cells after a prostate massage. His blood sugar readings on numerous occasions was 69 mg. His blood pressure was 110/70. He was placed on a normal diet and asked to eat at least six times per day although in his work as a salesman it was difficult for him to obtain food regularly. He did quite well under this management and had no other symptoms until he developed a deep coma and died under what I think was hyperinsulinism shock.

Case 8. A single woman, aged 61, had a history of loss of weight. Her average weight was 112 pounds and her present weight was 91½ pounds. Her physical examination including roentgen ray and laboratory studies was normal except for her blood sugar and a slight disturbance shown in the electrocardiogram. The only finding of any importance was a blood sugar of 69 mg. Her principal complaint was nervousness and neuritis in her arms and knees. She was extremely hypersensitive as to her condition, had a poor appetite and a lot of nervous symptoms which were not indicative of any particular disease. Under a regimen of diabetic and vitamin therapy, her mental attitude was improved markedly. She had no more delusions or imaginary symptoms. Her home was in a distant city and I lost track of her for a few months. Recently I had a letter from a state hospital asking for her history and record which might give some evidence as to her mental condition.

These histories are given briefly as to physical and laboratory findings but were selected as typical cases because no complications of other diseases have been indicated after complete physical and laboratory examinations.

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AMA HOUSE OF DELEGATES MEETS JUNE 7

The House of Delegates of the American Medical Association will convene in Chicago on June 7, 1943. *The Journal of the Association* reports in its January 2 issue. This meeting will take the place of the ninety-fourth annual session of the Association, originally scheduled to convene in San Francisco in 1943.

On September 26 it was announced that the San Francisco session had been canceled because of the war demands on the time of American physicians, as well as the transportation problems involved. This cancellation is the third time in the history of the Association that such an action has been taken, the other two times in 1861 and 1862, during the Civil War.

The many significant problems confronting the medical profession because of the war, particularly those concerning the provision and distribution of physicians and the provision of medical services for the nation's civilian and military needs, will highlight the problems to be considered by the House of Delegates at its meeting in Chicago next June.

INFECTIOUS MONONUCLEOSIS

REPORT OF A SERONEGATIVE CASE

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Infectious mononucleosis is not a rare disease but it often is overlooked because of a low threshold of suspicion on the part of the attending physician. In the past it apparently has masqueraded as "grippe," influenza, septic sore throat, mesenteric adenitis, appendicitis and German measles.

Infectious mononucleosis is an infectious and probably contagious disease occurring in young people and characterized by malaise, fever, bilaterally enlarged and tender cervical lymph nodes, lymphocytosis and the presence of heterophile antibodies in the blood serum. The disease tends toward small epidemics and is not fatal.

HISTORY

The earliest record of this disease is by Filatow,¹ of Moscow, who in 1885 described cases of acute enlargement of the cervical lymph nodes without associated inflammatory changes in the mouth, nose or pharynx. In 1889 Pfeiffer² gave a detailed description of the disease, designating it as glandular fever. West,³ in 1896, described a comparatively large epidemic in Ohio, and since then many reports of the disease have appeared in the medical literature. In 1920, Sprunt and Evans⁴ studied the disease to which they applied the term infectious mononucleosis and emphasized the blood cytology. Paul and Bunnell,⁵ in 1932, suggested the use of the heterophile antibody test in the diagnosis of this condition.

ETIOLOGY AND PATHOLOGY

The etiology and epidemiology of this disease remain obscure. Fundamentally, it is not known whether infectious mononucleosis is caused by an organism of an unusual type that produces an unusual immune reaction or whether it is an ordinary bacterium which produces an unusual type of cellular reaction. The most promising field, that of the filtrable viruses, has not thus far yielded any conclusive results.

Epidemics of infectious mononucleosis are not infrequent but the manner of spread has not been ascertained. The pathology of the disorder has not been studied extensively because of the absence of autopsy material. The study of lymph nodes removed at biopsy has resulted, however, in an understanding of the fundamental nature of the lymphocytic proliferation. Gall and Stout,⁶ on the basis of ten lymph nodes obtained by biopsy, assert that there is a specific pathologic picture which is characterized by (1) marked proliferative activity of the pulp, (2) extensive but focal pro-

liferative activity of clasmotocytes, and, (3) the appearance of large numbers of specific infectious mononucleosis cells. These are large lymphocytes with abundant basophilic cytoplasm which with phloxine and methylene blue stain the cytoplasm a filmy blue.

SYMPTOMATOLOGY

The symptomatology is protean and may be even bizarre in atypical cases. The incubation period is probably from five to twelve days and the mode of onset, while variable, is usually abrupt with fever, 100 to 103 F. (often chills and sweats), dizziness, faintness, malaise, retro-orbital aching, prostration out of proportion to the severity of the disease, sore throat and generalized adenopathy. The cervical lymph nodes are the ones most frequently involved and are usually moderate in size, discrete and only slightly tender, although the axillary, inguinal and mediastinal lymph nodes often are involved. The eyes may be puffy and reveal a granular conjunctivitis. The skin not infrequently reveals a typhoid-like, morbilliform or scarlatiniform eruption—seventeen of ninety-one cases.⁷ The spleen is enlarged palpably in about 50 per cent of the cases. Jaundice, which looks typically like catarrhal jaundice, may be the presenting symptom.⁸ Central nervous system manifestations (benign lymphocytic meningitis) have been reported.⁸

LABORATORY FINDINGS

The diagnostic laboratory findings include elevation of leukocyte count, 10,000 to 30,000, with an absolute lymphocytosis amounting to as high as 90 per cent or more. The lymphocytes are of all possible sizes, shapes and staining characteristics. Large, atypical, irregularly lobulated lymphocytic cells with sky-blue cytoplasm, a perinuclear clear zone and small variable sized vacuoles in the cytoplasm are almost pathognomonic of infectious mononucleosis.

In approximately 90 per cent of cases of infectious mononucleosis the patient's serum contains heterophile antibodies in the form of agglutinins for sheep red blood corpuscles in titer of 1 to 32 or higher.⁵ Agglutinins are present in low titer during the first few days but by the second or third week average 1 to 256 or higher, thence falling off sharply as a rule by the fifth week. The serum of normal individuals may contain agglutinins in 1 to 8 dilution and patients who have received horse serum may reveal a titer of 1 to 64 or higher. At present, there are a certain number of seronegative cases in almost every large series reported, chiefly in sporadic cases among children. Bailey and Raffel⁹ and Davidsohn¹⁰ recently have devised absorption tests with guinea pig kidney and ox cells in order to exclude normal agglutinins and those due to horse serum, thus making the test more specific for infectious mononucleosis.

DIFFERENTIAL DIAGNOSIS

Infectious mononucleosis has many or several features in common with a host of diseases, thereby making the differential diagnosis somewhat voluminous.

Hematologic Disorders—The great variability in the type of lymphocyte is the outstanding feature in infectious mononucleosis—quite the reverse from acute leukemia in which a "monotonous" blood picture with one type of lymphocyte, usually the lymphoblast, predominates. There is no anemia or reduction in blood platelets—again quite in contrast to acute leukemia in which rapidly progressive anemia and thrombocytopenia are quite the rule.

Diseases Associated With Sore Throat—Diphtheria is associated with more severe constitutional symptoms as a definite pseudomembrane, positive throat culture and leukocytosis in which granulocytes predominate. Vincent's angina is recognized by the presence of the spirillum in a direct smear from the throat and by the absence of the characteristic blood changes of infectious mononucleosis, which also differentiate infectious mononucleosis from lacunar tonsillitis and streptococcal sore throat.

Diseases With Glandular Enlargement—Syphilis, Hodgkin's disease, tuberculosis, leukemia and pertussis are differentiated by the blood smear and heterophile antibody reaction.

Diseases With Cutaneous Eruptions—Chickenpox, scarlet fever, measles and German measles offer little difficulty as a rule, although in twelve of the cases reported by Templeton and Sutherland⁷ the rash was practically indistinguishable from that of German measles. In this connection, it should be noted that the latter disease is associated with well-marked lymphadenopathy and not infrequently with an abnormal lymphocytic reaction in the blood. One wonders if the two conditions might not be related.

Miscellaneous—Influenza, typhoid fever, undulant fever, malaria, rheumatic fever, catarrhal jaundice and serum disease may baffle the unwary at times. However, if infectious mononucleosis is kept in mind little difficulty should arise.

The prognosis is 100 per cent favorable. The duration of the disease is usually from seven to twenty-one days but relapses are not infrequent.

Treatment.—Contagious precautions are best taken in hospitals and schools. Active treatment is symptomatic as for any febrile disease. Recently, sulfanilamide in moderate doses has been recommended but the disorder is so benign that it is doubtful whether the use of this drug is justified.

CASE REPORT

L. M., a 19 year old youth, stated that one week prior to time of seeing him on July 19, 1941 he developed a fever with generalized muscular aches, especially about the eyes and back, tender swellings (lymph nodes) in his neck, axillae and groin, followed by a sore throat with difficulty in swallowing. There were no other com-

plaints and an inventory of symptoms by systems was otherwise essentially negative. Physical examination revealed a well developed and nourished lad in no acute distress. The positive findings were: temperature 102 F.; markedly enlarged and somewhat cryptic tonsils; mildly injected throat; enlarged, smooth, discrete and slightly tender cervical, axillary and inguinal lymph nodes and a palpable spleen. The rest of the physical examination gave essentially normal findings.

Laboratory: Negative throat culture for diphtheria bacilli and streptococci; normal urine; negative blood Wassermann; hemoglobin 110 per cent; red blood cell count, 5,250,000; white blood cell count, 12,050; differential count, lymphocytes 27, monocytes 54, neutrophils 17, basophils 2. The blood smear was typical of infectious mononucleosis. On July 23 white blood cell count was 10,850; differential count, lymphocytes 55, monocytes 38, neutrophils 5, eosinophils 2. The heterophile antibody reaction was positive in dilutions of 1 to 10 and negative in all higher dilutions. On August 6 hemoglobin was 90 per cent; red blood cell count, 4,670,000; leukocyte count, 6,400; differential count, lymphocytes 43, monocytes 18, neutrophils 37, eosinophils 2.

In spite of the low neutrophile count, the patient was given sulfathiazole, grains 60, daily, for five days. His temperature became normal and he was markedly improved clinically within thirty-six hours after the institution of sulfathiazole therapy. He was up and about two weeks after the onset of his illness. He was seen last some eight months after his illness and he appeared to be in excellent health.

SUMMARY

There is almost no limit to the bizarre manifestations exhibited by infectious mononucleosis. If every patient with fever were examined carefully for lymphadenopathy, a palpable spleen and a blood smear taken, the diagnosis of this disease would be made more often. The heterophile antibody test is specific for infectious mononucleosis in about 90 per cent of cases.

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WAR MEDICINE TO BECOME A MONTHLY

Starting with the January 1943 issue, *War Medicine*, published by the American Medical Association in co-operation with the Division of Medical Sciences of the National Research Council, will become a monthly periodical. Since its inception in January 1941, it has been bimonthly.

ACUTE APPENDICITIS COMPLICATING LABOR

REPORT OF A CASE

H. CZUPRYK, M.D.

AND

N. A. SCHNEIDER, M.D.

ST. LOUIS

A review of a moderate amount of literature shows that acute appendicitis as a complication of labor is rather rare. Less than a dozen such cases were found reported in the literature which was reviewed. The fact, however, that the condition does occur makes it advisable that the possibility of the existence of acute appendicitis be kept in mind should a patient in labor complain of abdominal pain which cannot be explained satisfactorily on the basis of the pain associated with the uterine contractions.

Nothing new is presented in the case reported, the reason for the report being to add one more such case to the record.

Differential diagnosis, operative technic and anesthesia have been treated adequately in the literature and will not be discussed in this paper.

REPORT OF CASE

Mrs. R. L., aged 29, white, gravida 2, entered the hospital at 7:20 a. m., February 4, 1942. She stated that uterine contractions had begun some time after midnight. In addition to the pain associated with the uterine contractions, she noticed pain in the right lower abdominal region which did not disappear when the contractions subsided but continued and gradually became more severe. The pain seemed to be aggravated by the uterine contractions. There were some nausea and vomiting.

Examination.—At 9:00 a. m. the patient was having uterine contractions at about fifteen minute intervals of a few seconds duration with marked increase of pain in the right lower abdominal quadrant during the contractions. The pain did not cease as the uterine contractions subsided. The abdomen was dome shaped. Palpation showed the presence of a full term fetus. Pressure over a point about 3 cm. above and about the same distance medial to the anterior superior spine of the ilium caused the patient to have severe pain at the point of pressure. Moderate muscle rigidity was present. Rectal examination showed the cervix to be soft and thin with about 2 cm. dilatation and the fetal head presenting.

Heart and lungs were clear. Temperature was 98.6 F., pulse 102, respiration 28, red blood cells 3,970,000, Hb. 12/77, color index .9 plus, white blood cells 13,500 with stabs 12, segments 72, lymphocytes 14, monocytes 4.

Catheterized specimen of urine was amber, acid, 1.018 specific gravity, 2 plus albumin, negative for sugar, no casts, 4 to 6 leukocytes, 4 to 6 erythrocytes and some epithelial cells per field.

Menstrual History.—Menstruation began at the age of 15 and occurred every twenty-one days for four days. There had been no miscarriages. Last menstrual period was April 23, 1941. Computed day of delivery was January 29, 1942.

Past History.—She had had the usual childhood diseases, no operations and no injuries.

From the Departments of Obstetrics and Surgery, St. Anthony's Hospital, St. Louis.

Family History.—Husband was living and well and one child aged 2 was living and well.

Diagnosis.—In view of the history, symptoms, physical findings and laboratory findings, a diagnosis of acute appendicitis complicating the onset of labor was made and an appendectomy was deemed advisable.

Operation.—At 11:20 a. m. on the same day the abdomen was opened by a McBurney incision under gas-oxygen anesthesia. The incision was made slightly higher than usual. When the peritoneum was incised, a moderate amount of straw-colored slightly cloudy fluid escaped. The appendix was located easily and brought out through the incision. It was about 10 cm. long, edematous and scarred at its mid-part with its vessels engorged. The meso-appendix was clamped, separated from the appendix and ligated. The appendix was ligated at its junction with the cecum, amputated between clamps, the stump cauterized with phenol neutralized with alcohol and not inverted. The abdomen was closed in layers without drainage.

Pathologic Report.—The slightly elongated appendix had some irregularity of the lumen with a shiny serosa and some mural thickening. Sections showed catarrhal mucosal changes with submucosal thickening with fat and fibrous tissue and a lymphoid hyperplasia and mucosal infiltrations. Diagnosis was scarred appendix.

The patient went into labor again on February 6, 1942, at 7:00 a. m. and was delivered of a baby girl weighing 8 pounds, 8 ounces at 1:20 p. m. The post-operative and postpartum courses were uneventful. The patient left the hospital on February 15 and has been well since that time.

St. Anthony's Hospital.

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To assist in bringing under control the new eye disease, epidemic keratoconjunctivitis (inflammation of the cornea and of the membrane lining the eyelids and covering the front of the eyeball), it is requested in a letter in *The Journal of the American Medical Association* for January 2 that new outbreaks of the disease be reported to Murray Sanders, M.D., New York, who has been assigned by the Army to study the disease. In part the letter reads:

"To my knowledge the disease is not reportable in this country, and because of this and other obvious reasons it seems wise to bring it to the attention of *The Journal*. It is earnestly requested that if new outbreaks, or suspected outbreaks, of this disease (epidemic keratoconjunctivitis) should occur, notification of this fact be made to Dr. Murray Sanders (Department of Bacteriology, College of Physicians and Surgeons, 630 West 168th Street, New York City).

CASE REPORTS OF THE BARNES HOSPITAL

CLINICAL AND POSTMORTEM RECORDS USED IN WEEKLY CLINICOPATHOLOGIC CONFERENCES AT BARNES HOSPITAL, ST. LOUIS

W. BARRY WOOD, JR., M.D., and ROBERT A. MOORE, M.D., Editors

CASE 9

PRESENTATION OF CASE

The patient was a 17 year old, unmarried, white school boy who was admitted to the Neurosurgical Service of the Barnes Hospital on September 23, 1942. He was transferred to the Medical Service on the day of admission and died on November 5, 1942.

The patient was unconscious upon admission to the hospital and never completely regained consciousness. The history was obtained entirely from the parents.

Chief Complaints.—Ataxia, disorientation, fever and headache.

Family History.—Patient's father was said to have epilepsy.

Social History.—Patient, who had lived in the country most of his life, was in the second year of high school.

Past History.—The patient's health had always been excellent. He had whooping cough, chicken-pox, measles and mumps in childhood. At the age of 18 months he fell from a porch and injured his neck which remained stiff for from six to eight months, finally responding to treatment by a chiropractor. He frequently had had "running ears" in childhood but had had no attacks for seven years. One year before admission to the hospital he was "knocked out" while boxing and remained unconscious for three or four hours but suffered no known sequelae. Eight weeks before admission he rammed a cactus thorn into his right hand; the hand became infected but responded to local treatment.

Present Illness.—Seventeen days before admission the patient suddenly fell over while running in a baseball game. He was helped to his feet but remained ataxic and complained that he could not see. He was taken home and, according to his mother, when he tried to enter the house he "walked like he was drunk." She noticed a twitching of his hands but said that he never lost consciousness. He was treated at home by his physician and stayed home from school for only four days. He complained at times of headache and upon his return to school he still felt somewhat weak and the headache persisted. Two days before admission he returned home from school and again went out to play baseball. While batting he suddenly threw down the bat and fell over unconscious. When his physician saw him he noted sonorous respirations and attacks of quivering and shaking. On the following day he recommended that the patient be transferred to the hospital.

Physical Examination.—Temperature 38.8 C., pulse 108, respiration 44, blood pressure 150/80. The patient was lying propped up in bed in obvious respiratory distress. Respirations were stertorous and coarse rales were audible in the chest. The patient used all of the accessory muscles of respiration as though there was an obstruction in the respiratory tract. He was apparently unconscious and did not respond except incoherently to painful stimuli. The skin was clear but there was definite cyanosis of the mucous membranes and nail beds. Examination of the head revealed no evidence of recent injury and the neck was not stiff. The pupils were small but regular and equal; the optic disks were difficult to visualize but appeared to be normal. No hemorrhages were seen in the fundi. There was no nasal discharge and the patient held his mouth tightly closed. Because of the marked trismus, it was impossible to examine the mouth and pharynx. The neck veins were not distended; there was no enlargement of lymph nodes. The trachea was in the midline. There was slight dullness over both lung fields with palpable rhonchi and many coarse, sticky rales heard bilaterally. The heart did not appear to be enlarged. The cardiac sounds were of good quality; the rhythm was regular and no murmurs were heard. The abdomen was held rather rigidly but no masses could be felt. There was no evidence of distension of the bladder. Neurologic examination revealed marked rigidity of both legs with bilateral ankle clonus and pathologic toe signs. The rest of the neurologic examination gave normal findings.

Laboratory Findings.—Urine was acid, albumin 1 plus, sugar negative, red blood cells innumerable, white blood cells occasional. Blood: red blood cell count 5.4 million; hemoglobin 14.5 gm. per cent; white blood cells 12,400, differential count: basophils 1 per cent, "stab" forms 11 per cent, segmented neutrophils 70 per cent, lymphocytes 14 per cent, monocytes 4 per cent. Stool: no ova or parasites; guaiac test negative. Blood Kahn reaction negative. Blood culture sterile.

Course in Hospital.—A few hours after admission the patient was seen by the medical consultant who recommended that he be transferred to the medical service. A lumbar puncture was performed immediately after transfer and the spinal fluid pressure was found to be 100 mm. of water. The fluid was clear, containing only three cells and 40 mg. per cent of protein. The spinal fluid chlorides were 825 mg. per cent and the culture was sterile. A second specimen of urine was obtained by catheter and was found to be essentially normal. Late in the evening of the first day, the patient's respiratory difficulty became more marked and he was sent to the operating room for bronchoscopy. The procedure was carried out with considerable difficulty because of the marked trismus. A large amount of thick, tenacious mucus was aspirated from the bronchi and a tracheotomy was performed. The patient experienced dramatic relief. A roentgen ray film of the chest taken immediately before the pa-

tient was sent to the operating room showed only a slight increase in the normal lung markings. Cultures of the bronchial exudate obtained at bronchoscopy revealed *Staphylococcus aureus* and *pneumococcus*. Sulfadiazine therapy had been begun earlier in the evening.

September 24. On the morning after operation a pericardial friction rub was noticed and a roentgen ray film of the chest was reported as showing air in the pericardial cavity. Although the patient still failed to respond, his respirations were normal and occasionally he followed things with his eyes. A roentgenogram of the skull revealed no abnormalities. Blood chemical studies showed a sulfadiazine level of 11.4 mg. per cent, blood sugar of 113 mg. per cent, nonprotein nitrogen of 19 mg. per cent and a total protein of 5.6 grams with 3.4 grams of albumin and 2.2 grams of globulin. The patient's temperature remained above 38 C. during most of the day.

September 25. The patient was seen by the neurologic consultant who suggested the diagnosis of tetanus. Because of this suggestion 50,000 units of tetanus antitoxin were administered intravenously. The temperature remained elevated but the white count fell to 8,000. A second blood culture was sterile and the blood sulfadiazine level was 5.7 mg. per cent.

September 26 through October 3. During the next eight days the patient's condition remained approximately the same except for disappearance of the pericardial rub and a gradual fall in the temperature and pulse to normal. On September 29 a second lumbar puncture was performed which revealed no abnormalities. Blood calcium, phosphate, phosphatase and carbon dioxide combining power were all within normal limits. The white blood cells remained normal. The patient was seen by the neurosurgical consultant who found no indication for operation or pneumo-encephalograms. Until October 1 the patient was maintained entirely on intravenous fluids. On October 1 tube feeding was begun and was maintained until the time of the patient's death. Agglutination reactions with the antigens of typhoid, paratyphoid A and B and tularemia organisms were negative. Agglutination for brucella was positive in a titer of 1 to 160. The tracheotomy tube was changed at frequent intervals and the lungs remained clear. The neurologic signs were extremely variable but the trismus was persistent.

October 4 through October 29. After October 3 the patient again began to have fever varying between 38 C. and 40 C. His condition was otherwise essentially unchanged. There was a slight leukocytosis, the white count remaining at approximately 10,000. A third lumbar puncture on October 10 revealed no significant abnormalities. Because of the apparent failure of the patient to respond to chemotherapy, the sulfadiazine was discontinued on October 28.

October 30 through November 5. From October 29 until the time of death, the temperature remained

at approximately 40 C. and the pulse rate between 110 and 130. The patient was seen by the neurologic consultant on October 28 at which time the patient understood what was said to him and nodded his head in answer to questions. The trismus was no longer present and examination of the eyegrounds showed them to be normal. Tendon jerks seemed to be hyperactive and there was abortive ankle clonus. It was difficult to carry out a sensory examination but the patient was apparently sensitive to deep pressure over the legs. On November 4 the temperature rose to 41.6 C., the pulse and respiration became more rapid and the patient sweated profusely. Sulfadiazine therapy was resumed because of the rise in temperature. Examination of the chest revealed marked shifting dullness on the left with classical signs of hydropneumothorax. There was a fluid level seen on fluoroscopy and 800 cc. of thin, foul-smelling, purulent fluid were removed by thoracentesis. At 1:30 a. m. on the following morning the patient suddenly died. Cultures of the pleural fluid showed diphtheroid bacilli and nonhemolytic streptococci which grew best anaerobically.

CLINICAL DISCUSSION

DR. WILLIAM BARRY WOOD, JR.: This case presents an extremely difficult diagnostic problem. For the sake of discussion it might be well to divide the illness into two phases: first, the neurologic disturbance and, second, the pulmonary infection. The latter might be considered first since it was prominent when the patient came into the hospital and probably was the cause of his death. Dr. Walsh, you saw the patient shortly after I did. At that time he had signs of respiratory obstruction. Was the obstruction due to laryngeal spasm or was it due to mucus in the bronchi and trachea?

DR. THEODORE WALSH: It was due to the latter—there was no laryngeal spasm. The bronchoscopy was extremely difficult because of the patient's trismus, but otherwise it would not have been. There was a lot of thick mucus in the trachea and bronchi and after the mucus was removed the patient was markedly relieved.

DR. WOOD: If there was no laryngeal spasm, why was the tracheotomy done?

DR. WALSH: To keep the trachea and bronchi clear of mucus. It would have been impossible to do this without a tracheotomy through which mucus could be aspirated by suction.

DR. WOOD: Following bronchoscopy the patient's condition changed dramatically. There was no longer any respiratory obstruction and he breathed easily. On the following day, however, a pericardial friction rub was heard. The first roentgen ray film of the chest was normal but the one taken after bronchoscopy showed signs which were interpreted by the radiologists as indicating air in the pericardial cavity. Dr. Walsh, what do you think caused these signs?

DR. WALSH: I do not believe that there was air in the pericardial cavity. I think the air was in the mediastinum. That frequently occurs in patients

who have struggled during bronchoscopy as he did. The operation was done without anesthetic. I cannot find anything in the literature about air in the pericardium following bronchoscopy, and it is difficult to understand how it could possibly make its way into the pericardial sac.

DR. WOOD: It seems more likely then that this friction rub was associated with mediastinal emphysema as described by Dr. Louis Hammon some years ago.

DR. WALSH: There have been patients in this hospital with air in the mediastinum following tracheotomy.

DR. WOOD: The patient finally died with a purulent empyema. Could the mediastinum have become infected first, the infection then spreading to invade the pleural cavity?

DR. WALSH: I think it might have.

DR. WOOD: Dr. Goldman, do you think the infection came from the mediastinum or from a lung abscess which ruptured into the pleural cavity?

DR. ALFRED GOLDMAN: Both of these routes are possible, but the infection in the lung occurred rather late. I think it is more likely that the respiratory difficulty caused inflammation of his lung and that the pyopneumothorax followed the pulmonary infection.

DR. WOOD: You would favor a small abscess?

DR. GOLDMAN: Mainly because of the time relationship.

DR. WOOD: The patient was on sulfadiazine until the day before the empyema was discovered. Dr. Hageman, do you think that the sulfadiazine held the pulmonary infection in check until the chemotherapy was discontinued?

DR. PAUL HAGEMAN: When was the sulfadiazine stopped?

DR. WOOD: It was stopped twenty-four hours before the first signs of empyema.

DR. HAGEMAN: I doubt that the drug had any effect since the culture showed an anaerobic streptococcus, an organism which usually is unaffected by sulfonamide compounds.

DR. WOOD: Let us turn now to the neurologic aspects of the case. Here the problem of diagnosis becomes extremely complicated. Dr. Moore, if the patient had a lung abscess, could the neurologic disturbance have been related to it?

DR. CARL MOORE: If he had had a brain abscess as a metastasis from a lung abscess there should have been an abnormal spinal fluid.

DR. WOOD: Dr. Sachs, can brain abscess be ruled out in this case?

DR. ERNEST SACHS: We did not consider brain abscess when the man was admitted. When he came in on our service he had hypertension, blood in his urine and Cheyne-Stokes respiration. We felt that he had a lesion in the posterior fossa because of these symptoms.

DR. WOOD: Subsequently the urine cleared and he did not continue to have hypertension.

DR. SACHS: Dr. Smolik, was not the urine grossly bloody?

DR. EDMUND SMOLIK: The patient entered the hospital with a high fever, flushed and hot, with a history of possible trauma. He had Cheyne-Stokes respiration and was sweating profusely. It was difficult to visualize the eyegrounds but the optic disks appeared to be normal. Every two or three minutes the patient would go into a tonic phase and would become spastic. Between these episodes he would become flaccid and his knee jerks and ankle jerks would be normal. I saw the urine myself and it was grossly bloody.

DR. WOOD: In view of the course that the patient ran in the hospital, would you rule out brain abscess now?

DR. SACHS: After the patient had had a tracheotomy I was asked to see him and at that time I saw no indications for air studies.

DR. WOOD: Another interesting thing in the patient's history was the fact that he was knocked unconscious during a boxing match one year before his present illness. Dr. Jones, do you think the patient may have had a subdural hematoma?

DR. ANDREW B. JONES: One of the things considered was a subdural hematoma.

DR. WOOD: Did you think that the patient had a subdural hematoma?

DR. JONES: No, I did not.

DR. WOOD: Does subdural hematoma ever come on one year after the original injury?

DR. JONES: It can appear almost any time, often with no history of trauma.

DR. WOOD: How do you explain the trismus on the basis of a subdural hematoma?

DR. JONES: I have never seen trismus associated with subdural hematoma.

DR. WOOD: Dr. Jones, when you first saw the patient you made the excellent suggestion that the patient might have tetanus and he was accordingly given tetanus antitoxin. What prompted you to make this suggestion?

DR. JONES: When I saw the patient, and I do not know how many days he had been in the hospital, I had no difficulty in examining him. He was not unconscious. His eyes were open and he would follow your finger when asked to. He apparently understood what was said. He could not open his mouth or talk. I asked if there was a history of a bite by a dog or cat; none had been elicited. Then the question came up regarding vaccines, smallpox or any other infectious disease. There was no history of any of these. The sudden onset of trismus with inability to swallow is seen sometimes in tetanus. We did not know at the time that the man had not had spasm of the larynx. Subdural hematoma was an afterthought. We never found the man unconscious. His reflexes were active. I did not think that he had any form of encephalitis.

DR. WOOD: Dr. Sachs, do you think the patient could have had a brain tumor?

DR. SACHS: I do not think he had a space-occupying lesion. Because of the history of sudden onset it seemed he could not have had a brain tumor.

DR. SMOLIK: While he was on our service it was very difficult to get a complete history from his mother. We did consider a subdural hematoma because of the history of his having been playing baseball, but his fellow players stated that he had not been injured at any time during the game.

DR. WOOD: Dr. Jones, could Schilder's disease have caused this syndrome?

DR. JONES: Not classical Schilder's disease. The boy was not blind. He could have had a degenerative lesion in the medulla.

DR. WOOD: One of the first complaints was that he could not see. This complaint was transient. Dr. Gildea, do you agree with Dr. Jones?

DR. EDWIN GILDEA: Yes, I do not believe that he had Schilder's disease.

DR. WOOD: Dr. Harford, do you think that the patient could have had equine encephalomyelitis?

DR. CARL HARFORD: Equine encephalomyelitis is extremely rare without abnormal findings in the spinal fluid.

DR. WOOD: You would rule it out then because of the three normal spinal fluid examinations?

DR. HARFORD: Yes. In most cases there is also an elevated protein content of the fluid.

DR. WOOD: Would you exclude encephalitis on the same grounds?

DR. JONES: I would not exclude all types of encephalitis.

DR. WOOD: You do not think the patient had Economo or St. Louis encephalitis?

DR. JONES: No, I do not, but he could have had a post infectious encephalitis.

DR. WOOD: Dr. Gildea, would you be in favor of ruling out the viral forms of encephalitis?

DR. GILDEA: The recurrent nature of the neurologic signs makes it necessary to assume that the patient was suffering from an active infectious process. In Economo encephalitis, 20 per cent of the patients have no increase of cells in the spinal fluid.

DR. WOOD: May the trismus be explained by encephalitis?

DR. GILDEA: I have never seen an encephalitic patient with trismus but I do not see why it should not occur.

DR. WOOD: Ford states in his textbook that trismus occurs in four out of every 100 cases of encephalitis. As you can see from the present discussion there is little unanimity of opinion as regards the diagnosis. Unfortunately, as part of this clinical-pathologic exercise one must make a clinical diagnosis. I believe that the patient was suffering, first, from rather widespread lesions in the brain which were probably focal in character. I would suspect that these lesions were due to encephalitis but I certainly do not make that diagnosis with any degree of confidence. Secondly, he died of purulent empyema. He may have acquired this from a small lung abscess which ruptured into the pleural cavity or from an infection in the mediastinum. Because of the pericardial friction rub and the roentgen ray findings I would be suspicious of the latter.

CLINICAL DIAGNOSIS

Encephalitis (?); tetanus (?); thalamic lesion (?).

Bronchopleural fistula with hydropneumothorax.

DR. WOOD'S DIAGNOSIS

Encephalitis with disseminated focal lesions.

Purulent empyema, left.

Mediastinitis.

ANATOMIC DIAGNOSIS

Organizing thrombus in basilar artery.

Encephalomalacia of central part of the pons.

Bronchopneumonia of left lower lobe with abscess formation.

Rupture of abscess into pleural cavity with a bronchopleural fistula.

Empyema, left.

Pneumothorax, left.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: A culture of the purulent fluid in the left pleural cavity yielded *Pseudomonas*, *Staphylococcus aureus*, an anaerobic streptococcus and a diphtheroid. On the basis of the morphologic appearance it is my opinion that the pulmonary and pleural infection was acquired through the respiratory tree and not through the rupture of a mediastinitis into the pleura.

The thrombus in the basilar artery was partially organized. Although I can not say categorically that it was present eight weeks before death, this is entirely possible. A large part of the pons showed ischemic necrosis and here again the histologic findings are consistent with a duration of eight weeks. The cause of the thrombus must remain unexplained.

DR. SACHS: It is striking that the location of the lesion is practically the same as that produced in animals by tying the basilar artery, a procedure which produces decerebrate rigidity.

DR. ROBERT MOORE: You would accept the conclusion that the thrombus was present at the time the patient was admitted to the hospital?

DR. SACHS: Yes.

DR. JONES: In my experience, signs of decerebrate rigidity are those of spasticity and do not present themselves one minute and disappear the next as in this patient.

DR. SACHS: We see decerebrate rigidity clinically and the signs come and go. Turning the head will often bring them on. The inconstant signs are quite characteristic.

DR. EDWARD MASSIE: Was there air in the mediastinum or pericardial cavity?

DR. ROBERT MOORE: There was no air found at autopsy and no evidence of acute or chronic inflammation in the mediastinum or pericardium.

CASE 10

PRESENTATION OF CASE

The patient was a 21 year old, single woman who was first admitted to Barnes Hospital September 10 and died October 21, 1942.

Chief Complaints.—Weakness, loss of appetite and loss of weight.

Family History.—Entirely unknown to the patient who was adopted.

Social History.—The patient, a fourth year college student, was brought up under adequate financial circumstances. A year before admission she learned of her adoption and since then had been emotionally upset. Her habits were good and she had a good scholastic record.

Past History.—Other than childhood diseases, there was no significant illness.

Systemic History.—Appetite had never been large, but weight was maintained.

Present Illness.—The patient stated that she began to feel fatigued about one year previous to admission, this symptom becoming greatly exaggerated a few months later when she developed a sore throat with fever. She was acutely ill at that time for three days and was given a sulfonamide drug. Within one week she returned to school but felt so tired that it became difficult to maintain her standard of work. Her appetite gradually failed. After a summer vacation there was no improvement and fatigue became so pronounced that even the effort of eating became too great. Two weeks before admission the patient was taken to a hospital where hypothyroidism was diagnosed and thyroid extract was prescribed. The extract was discontinued when vomiting occurred and the patient then was sent to the Barnes Hospital. Since onset there had been a loss of weight of from 15 to 20 pounds. No notation of pigmentation appears in the history.

Physical Examination.—Temperature 97.5 F. pulse 90, respiration 18, blood pressure 78/50. Significant findings were some undernourishment, a generalized brown pigmentation, most marked on the exposed surfaces, particularly on the dorsum of the hands and on the knuckles of the fingers. The mucous membrane of the mouth was not pigmented. There were black freckles scattered over the arms and legs. Except for hypotension and hypoactive tendon reflexes the rest of the physical examination gave normal findings.

Laboratory Findings.—Red blood cells 4,580,000, hemoglobin 15.2 gms., white blood cells 7,000, differential count: 1 eosinophil, 2 "stab" forms, 53 segmented forms, 43 lymphocytes, 1 monocyte. Urine was normal. Blood chemistry showed sugar 67 mg. per cent, nonprotein nitrogen 31 mg. per cent, sodium chloride 440 mg. per cent, potassium 35.1 mg. per cent. Blood Kahn test was negative. Gastric analysis showed no free HCL in the fasting or postmeal specimens; present after histamine. Stool examination was negative. Basal metabolic rate was plus 1 per cent. Roentgenograms of lungs and abdomen were indeterminate.

Course in Hospital.—Large amounts of adrenal cortical extract, glucose and salt solution were given parenterally and the lassitude which had increased during preliminary examinations promptly disappeared. The treatment was modified by the

addition of sodium chloride by mouth and by the substitution of desoxycorticosterone acetate which finally was implanted in pellets under the skin. Two weeks after admission the blood pressure reached 114/72, the patient felt much stronger and her appetite had improved. At that time the blood sodium chloride was 665 and the potassium level was 17.4 mg. per cent. However, an anemia was noted, the red count being 2,440,000 and the hemoglobin 7.8 grams. Pitting edema over the legs and sacrum appeared and a few days later an unexplained rise in temperature occurred following a transfusion. The patient's chief complaints again were exaggerated but she recovered shortly and was discharged on a high salt diet.

Second Hospital Admission.—October 15 to October 21, 1942. For about ten days after leaving the hospital, the patient was quite active and felt fairly well but not "up to par." Then great fatigue returned and shortness of breath on slight exertion developed rather quickly. On the day of admission she vomited three times. Due to a misunderstanding the patient took salt tablets for only one or two days instead of continually as directed.

Physical Examination.—Temperature was 37.7 C., pulse 88, respiration 20, blood pressure 105/70. The essential findings were extreme lassitude, a deeply pigmented skin and cyanosis of the lips. The superficial lymph nodes were palpable but were not considered enlarged. There was some dullness with suppression of breath sounds at the base of the right lung. The tendon reflexes were hypoactive.

Laboratory Findings.—Red blood cells 4,260,000; hemoglobin 13.1 gms. White blood cells 6,000; differential count: 1 basophil, 5 "stab" forms, 30 segmented forms, 61 lymphocytes, 3 monocytes. Urinalysis showed specific gravity 1.017, albumin 1 plus. Blood chemistry showed sugar 65 mg. per cent, nonprotein nitrogen 10 mg. per cent.

Course in Hospital.—October 16. Blood pressure was 100/78. The temperature which rose to 39.2 C. shortly after admission returned to 37 C. Twenty cc. of adrenal cortical extract were given intravenously with 2,000 cc. of 5 per cent glucose in saline. Oxygen was administered through nasal catheter. Differential count showed 5 "stab" forms, 59 lymphocytes, 3 monocytes.

October 17. The patient felt stronger and the cyanosis had disappeared. Pitting edema of the ankles and back was noted. Twenty cc. of adrenal cortical extract was given with intravenous glucose solution. Salt medication was omitted.

October 18. Blood pressure was 108/90. Signs at the right base had disappeared but the patient was dyspneic and orthopneic. Edema was pronounced over the legs and back and signs of ascites were present. Fluoroscopic examinations of the chest showed a globular heart, clear lungs and high diaphragm.

October 19. Blood pressure was 106/92. Blood sodium chloride was 663 mg. per cent, nonprotein nitrogen 10 mg. per cent.

October 20. Edema was less. The patient vomited

breakfast. Blood proteins were 5.4 gms. per cent, albumin 3.3, globulin 2.4. Electrocardiogram showed low voltage, evidence of myocardial damage and right axis deviation.

October 21. The patient was seen by the ward physician at 7:40 a. m. She was lying quietly and said that she felt better than during the previous days. One hour later the nurse observed that she had stopped breathing and was deeply cyanotic. Artificial respiration and stimulants were administered immediately without effect.

During the second hospital stay (six days), the patient received a total of 200 cc. adrenal cortical extract (Upjohn) and 7,000 cc. of parenteral fluid. The daily urinary output varied from 370 to 500 cc.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: Concerning the primary diagnosis of Addison's disease, there is no question. However, before discussing the organic lesions found in this case, in view of the sequence of events, I should like to ask Dr. MacBryde briefly to state something about the functional disturbances seen in this disease. The patient was in an Addisonian crisis on her first admission to the hospital but was rescued by treatment.

DR. CYRIL M. MACBRYDE: The pathologic physiology of Addison's disease is complex but a clear understanding of it is necessary to proper treatment. Complete absence of adrenal cortical secretion results in death. Partial insufficiency results in serious disturbances of salt and water balance, in central and peripheral circulatory failure and in profound derangement of carbohydrate metabolism. The functional disturbances of Addison's disease are concerned with: first, the permeability of membranes and electrolyte metabolism; second, the activity of tissues with specialized functions such as the kidney, the liver, muscle and the gastrointestinal tract and, third, the activation of enzymes. There is not a single hormone secreted by the adrenal cortex, but extracts can be fractionated into three parts. In one group one finds the compounds such as desoxycorticosterone which affect salt and water metabolism primarily. A second group contains Kendall's "Compound E" which affects carbohydrate metabolism, chiefly, and other compounds. The third fraction is the amorphous material containing active principles not yet obtained in crystalline form. As a result of the increased membrane permeability in adrenal insufficiency, the blood capillary walls allow excess amounts of fluid to pass through and the blood volume and blood pressure fall. The kidney tubules fail to absorb sodium and chloride ions but potassium absorption is increased. There is thus a loss into the urine of sodium and chloride and a fall of these in the blood with loss of water also and resultant hemoconcentration. Blood potassium tends to rise. The ability to form carbohydrate from non-carbohydrate sources such as protein is diminished or lost. Glycogen storage in the liver is impaired greatly. The administration of corticosterone or

compound E results in prompt hepatic storage of glycogen. Similar results follow the use of a potent unfractionated adrenal cortical extract. This effect involves the activation of enzymes by cortical hormones. The brownish pigmentation of the skin is probably the result of enzyme derangement resulting in excessive melanin deposit. All of these physiologic disturbances result in a typical syndrome consisting of decreased blood volume, dehydration, profound weakness, low blood pressure and signs of shock, low blood sodium, chloride and sugar, and high blood potassium, blood urea and nonprotein nitrogen.

DR. ALEXANDER: On her first entry the patient apparently did very well for two weeks but then developed a profound anemia. Is anemia part of the picture of Addison's disease?

DR. MACBRYDE: No, it is not. That is an interesting subject historically. In his description of the disease Addison used the word "anemia," but I believe he meant weakness and asthenia rather than a low red blood count. However, Addisonian anemia or pernicious anemia, also described by Thomas Addison, was probably somewhat confused in his mind with what we now call Addison's disease and he made some attempt to connect them. In his original description of pernicious anemia, published in 1849, he describes three of the cases as having disease of the suprarenal capsules while in his classic description of Addison's disease, published in 1855, he spends some time describing pernicious anemia first, then goes on to say that his vain search for the cause of that condition and his interest in similar states led to his observations of the disease caused by adrenal insufficiency. In the stage of hemoconcentration we frequently find an abnormally high red count, but after the hemodilution resulting from treatment there may be anemia.

DR. ALEXANDER: Of great interest was the fact that on her first admission the patient began to develop edema and on her second admission she may have had some ascites. Dr. MacBryde, what is your explanation for this?

DR. MACBRYDE: Her edema was not very great. There was a definite mild pitting edema of the legs and back—possibly she may have had some ascites. We were never sure of that. After treatment on her first entry she also had mild edema. One sees this frequently in patients with Addison's disease who are undergoing intensive treatment, and it is hard to avoid. This is possibly because they are given too much adrenal cortex extract and too much fluid. On the other hand, if one does not give it they will die, so it is a question of maintaining a balance between the two. Edema is quite common and one frequently sees a slight degree as the patient is getting under control but it usually disappears within a few days.

DR. ALEXANDER: May I interrupt to ask why these patients should have edema?

DR. MACBRYDE: It results from too rapid re-

versal of the dehydration. The patient has a tendency to lose salt and water at first; edema occurs with rapid restoration. Another fact that should be taken into consideration is that patients with Addison's disease do not have normal circulation and they tend to have myocarditis. Probably the factor of the inability of the heart to respond to therapy and of the circulation to take up the fluids given in treatment can cause edema.

DR. ALEXANDER: Do not many of the patients have small hearts?

DR. FRANK D. GORHAM: The roentgen ray department stated that this patient's heart was not small.

DR. ALEXANDER: What about the edema on her second admission?

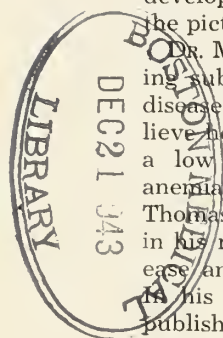
DR. MACBRYDE: She left the hospital after her first admission with three pellets of desoxycorticosterone under her skin. They were small pellets of 75 mg. each and we had intended implanting four but one became contaminated and because the girl was small, weighing only around 100 pounds, we felt three might be sufficient. She was instructed to take a 1 gram tablet of salt three times a day in addition to an abundance of salt in the food which she did until the supply of tablets we had given her was used up. She was to have come back to see me at that time but did not. Until the time she stopped taking her salt she felt fine. But within three or four days she became ill again, was extremely weak, was unable to take food and was without adequate nourishment and fluid intake for several days. A friend brought her into the hospital and she was in a typical Addisonian crisis. She was cyanotic but had no edema and no hypertension. She was in a shock-like state, barely conscious, dehydrated, with a very low blood pressure.

DR. ALEXANDER: Dr. Wood, you showed me an article by Darrow on the effect of the adrenal cortical hormones on animals. Will you tell us about this?

DR. WILLIAM BARRY WOOD, JR.: Darrow demonstrated that animals given large doses of desoxycorticosterone develop small focal lesions in the myocardium. This change was thought to be due to loss of potassium because similar lesions can be produced by low potassium diets.

DR. MACBRYDE: Dr. Wood's point is extremely important. The patient could have had myocardial failure because of insufficient potassium; an increase in potassium excretion probably would result from intensive adrenal cortical therapy. To keep the patient in good condition she should have been getting an adequate amount of potassium, from 4 to 5 grams a day. She had had practically no food for several days. That factor before entry plus the factor of a large amount of adrenal cortical extract and large amounts of sodium in treatment, intensified perhaps the potassium deficit.

DR. ALEXANDER: Dr. Bulger, do you have any other explanation for the edema?



DR. HAROLD BULGER: The report of the case suggests the possibility of nutritional edema. The patient had had a poor food intake for some months and started too quickly to overcome dehydration.

DR. ALEXANDER: Dr. Massie, have you anything to say concerning the electrocardiogram?

DR. EDWARD MASSIE: There is no typical electrocardiogram in Addison's disease. It is true that most severely ill patients with this condition have abnormal changes in the electrocardiogram. This patient's record does show low voltage, inverted T waves and right axis deviation. These changes probably are manifestations of the severe physiologic changes in the circulation in Addison's disease.

DR. ALEXANDER: She had palpable lymph nodes but they were not considered pathologically enlarged. Dr. Moore, do you believe that she had a leukemoid reaction?

DR. CARL MOORE: I do not know how to explain the lymphadenopathy. In general it may be said that the patient had some form of lymphatic stimulation, but we are not in a position to say what that was. She was suspected of having infectious mononucleosis but the heterophil agglutination test was negative at postmortem and there is nothing else to suggest the diagnosis. It is possible that she had some increase of tuberculous activity and that the lymphadenopathy resulted from that. I doubt if she had any primary hematologic change.

DR. ALEXANDER: Is it not true that in Addison's disease one sometimes finds enlarged lymph nodes and an enlarged thymus—so-called status thymolympathicus?

DR. MACBRYDE: Adrenal cortical deficiency occurs most commonly in people of the so-called "lymphatic" or "thymic" types.

DR. ALEXANDER: The patient died very suddenly. Have you any clinical explanation for this?

DR. MACBRYDE: Addison's disease itself can cause sudden death. Sometimes the death is surprisingly sudden. One case that came here with typical Addison's disease but not in crisis was sent to roentgen ray for some films because of the possibility of tuberculosis of the spine. The patient died while these films were being taken. So, death can occur without treatment and is most apt to occur that way. This patient had some improvement for a few days but showed circulatory failure and her death could have been due to excessive strain on her weak heart.

DR. ALEXANDER: Do you expect her to have tuberculosis of the adrenals?

DR. MACBRYDE: The older reports show that 80 per cent had tuberculosis of the adrenal glands, but that percentage is growing less. Now about 50 per cent have tuberculous adrenals. This patient had no evidence of tuberculosis. I expect to find that she had simple atrophy of the adrenal cortex.

DR. ALEXANDER: How much of the gland needs to be destroyed before symptoms develop?

DR. MACBRYDE: I suspect that all the patients who live for any length of time have a considerable

amount of adrenal cortex left. We have been unusually fortunate in the last five years in that we have lost only three patients. Each patient that we lost had practically no adrenal cortical tissue when studied at postmortem.

DR. ALEXANDER: Then you expect to find markedly atrophic adrenals in this case. Do you expect to find anything in the kidneys?

DR. WOOD: It is conceivable that there might be changes in the kidneys because animals on low potassium diet are known to develop renal lesions.

CLINICAL DIAGNOSIS

Addison's disease.

DR. ALEXANDER'S DIAGNOSIS

Addison's disease.

ANATOMIC DIAGNOSIS

Primary atrophy of the adrenal cortex.

Focal hemorrhage, necrosis and lymphocytic infiltration in the myocardium.

PATHOLOGIC DISCUSSION

DR. MARGARET SMITH: Primary atrophy of the adrenal cortex might better be called a selective cortical necrosis. There is a selective destruction of most of the cells of the adrenal cortex analogous to the destruction of the cells of the liver in the so-called acute yellow atrophy of that organ. In this case the two gland together weighed only 3 grams. A few small clusters of cortical cells remained which showed evidence of hyperplasia. It seems certain that this condition has been observed with much greater frequency in the last fifteen years. As Dr. MacBryde has stated, the older reviews of Addison's disease attribute the destruction of the adrenal to tuberculosis in the great majority of instances, but recent observations have shown a selective destruction of the adrenal cortex in approximately 50 per cent. Because of the apparent increase in this condition Wells expressed the suspicion that some drug which had come into use during recent years was responsible for the damage to the adrenal. However, this has not been substantiated as yet.

The hyperplasia of the lymphoid tissue of the body including a thymus, large for the age of the patient, and conspicuous nodules of lymphoid tissue within the thyroid gland has often been recorded in Addison's disease although it has not been a constant finding. The association of the adrenal insufficiency of Addison's disease with hyperplasia of the lymphoid tissue is noteworthy in view of the present hypothesis that adrenal insufficiency is present in status thymicolymphaticus.

Areas of necrosis similar to those described by Darrow were found in the cardiac muscle. In the kidney there were slight necroses of the renal epithelium and precipitation of albuminous fluid in the tubules.

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FEBRUARY, 1943

EDITORIALS

FRATERNALLY YOURS

An editorial expresses the thoughts of the writer; these may or may not be in accordance with those of others. It may elicit opposite opinions and thereby stimulate a salutary effect on the thinking of all the readers. It may present something new; but by no stretch of imagination could the present effort be placed in the last category. We of organized medicine need no preachment on the new or novel. We need only to utilize those opportunities we have, for unless we do, we may not have them long.

Look around at the danger signals. Three fourths of the people in a representative poll wanted government to raise the necessary funds by taxation to pay doctors' bills. In the courts of law the medical profession stands convicted of being a "trade"; they say that it has been "restraining" others. The last A. M. A. meeting was addressed by a high government official who said "either, or else." More lately, we read that a man "to become a doctor merely because he wants to," and "to locate regardless of community needs" will be another form of criminality in the postwar adjustment. In certain localities, graduates of good medical schools have been forced to share appointments with osteopaths on county and municipal hospital staffs. A labor periodical recently advocated the adoption of an all-inclusive medical-hospital scheme, baiting the hook with the usual something-for-nothing dough-ball. Bills have been introduced in Congress, the implied and avowed intent of which would have made all hospitals directly and all medical services indirectly the immediate puppets of governmental money and control.

These are items of nation-wide implication. In viewing these signs of the time one may say they mean nothing and are not alarming. (That is what they thought of the Yankee Doodle sergeant doodling with the air-raid detector just over one year ago at Pearl Harbor.)

These facts might be considered alarming, but

some will say they probably will straighten themselves out. (That is what isolationists said about Japan as they allowed oil and scrap to pour out of this country.)

The third view, to which I subscribe, is that organized medicine had better get busy. It is on the spot, behind the eight-ball.

It is well for those of the profession who are financially able, to dawdle fat gold watch-chains, chew fat cigars, smile fat complacent smiles and nod unctuously and condescendingly on those of the profession who worry about these matters. Yet, if you of that category were given a heritage, a talent, a "torch," to carry—what do you show for it now, when you beam and say, "I'm sitting pretty, I've made my pile"? Are you so grossly egocentric as to believe that God, and your predecessors in medicine, had nothing to do with your success? Of course you worked hard; success does not come easy. But without this medical background where would you be? Do you measure success in dollars only? Then what pikers you are compared with that goat-gland specialist with his yachts and red automobiles. Thus, if your success is measured only in the dollars you have and not in your active support of medical organizations, you are a tin-horn, big-time Charlie on the money exchange, and a useless dead fish on the medical front!

To those whose age gives them the sense of merely seeking a few more diminuendo years, just coasting along with the ebb tide and letting "the younger fellow" do the fighting on the medical front, may we respectfully ask did you actually ever do any fighting on this same medical front? Or were your activities more of the "dutiful acquiescence" type?

To those physicians who are early in their careers, or who have just paid off the mortgages, what more fitting remembrance could be made to those of the same age group than to keep the home fires at least smouldering?

To those who are so selfish, who wish to hog the financial windfall of the present; to those who are utterly engrossed in personal advancement; to those who feel that the rape of our profession is inevitable and, therefore, that to be resigned is more sensible; to all of these we extend our warmest and most heartfelt, undiluted scorn. You do not deserve the esteem given you as a physician inasmuch as you are not willing to accept the challenges to our profession. You are not fit to associate with those who have worked and dared and sacrificed in order that this professional procession might go on and on, ever upward.

To those of any age group who believe in the Maginot line of "beneath our professional dignity," we beg you not to sleep and allow our past good favor and good fortune to coast along as our present defense. Our defense and our attack can be carried out in a manner which will satisfy these considerations, but it must be awake and it must be aggressive.

Physicians always have been known as poor organizers, as lacking in united effort. We have always admitted this laughingly. Now is the time to correct this tendency or we will not be joking about it long. Then we will not be united but we will be organized—by bureaus!

"Arouse and beware," for tomorrow will be too late. Let us all support those organizations which are developed within ourselves, to defend ourselves! Support the National Physicians Committee which is fighting our battles on a nation wide scale. Support the Community Health League which is carrying on a state wide campaign. You who quibble over what means should be used; whether these organizations are exactly right or wrong in their methods, would probably argue as to whether a rattler should have its head blown off with a shotgun or a 45!

Here is a definite and concrete manner of showing where you stand. Here you may prove to yourself and to those who are away in your service that you have earned the right to be addressed—"Fraternally yours."

VINCENT T. WILLIAMS, M.D.

TREATMENT OF CARCINOMA OF THE PROSTATE

Some time in the dim past man discovered that removal of the testes would bring about certain anatomic and psychologic changes in the animal organism. The polygamous rulers and rich men of Turkey, China and other countries took advantage of the effects of prepuberal castration in the recruitment of slaves for their harems. John Hunter was probably the first to study the effects of orchidectomy in experimental animals. He noted rapid and conspicuous atrophy of the secondary sexual organs, particularly the prostate and seminal vesicles. During the last part of the nineteenth century, White, a surgeon in Philadelphia, reasoned that if the normal prostate became atrophic when the testes were removed, then it was possible that the enlarged prostate of older men would shrink in size under similar circumstances. The surgical mortality was high and the results were equivocal. Within a decade the procedures of suprapubic and perineal prostatectomy were described and the theoretic basis for castration as a therapeutic measure was largely forgotten.

Thirty years later Huggins of the University of Chicago undertook to reinvestigate the effect of castration on the prostate in animals and in man. At about the same time, Kutscher and Wolbergs,¹ in a search for the source of the acid phosphatase in the urine, discovered that normal prostatic tissue is extremely rich in this enzyme. A little later Gutman, Sproul and Gutman² demonstrated that

the neoplastic tissue and the serum from patients with metastasizing prostatic carcinoma contained a relatively high concentration of acid phosphatase. Huggins³ immediately seized on these facts and reasoned that if the normal prostate secretes a phosphatase, if castration depresses this secretion and if prostatic carcinoma continues to secrete a phosphatase, then, it follows that castration in men with carcinoma of the prostate might induce some degree of involution, since the neoplastic cells are not entirely abnormal. The results of this inductive logic are now well known to all urologists. In about 75 per cent of all patients with prostatic carcinoma, subjective and objective improvement is observed following castration. In a few there is apparent regression of the metastases. Regardless of the failure in 25 per cent, and the lack of exact information on the ultimate outcome in others, it is evident that gonadectomy is a worth-while procedure and one that should be recommended.

From these observations it appeared that the driving force for carcinoma of the prostate was some substance, probably the androgens secreted by the testes. The effects of androgens may in large part be neutralized by an adequate amount of estrogen; hence, the administration of estradiol benzoate or of stilbestrol should bring about the same results as castration. In general this has proven to be true. Furthermore, Schenken and Burns⁴ have observed degenerative changes in the neoplastic cells following the therapeutic use of estrogens.

For too long carcinoma of the prostate has been regarded as a hopeless disease. Few patients come to the attention of the urologic surgeon in the early stage when the radical perineal prostatectomy of Young is the treatment of choice. Today there are two methods of treatment that have in recent years given encouraging results, even in the advanced stage of the disease. Let medicine abandon the dictum of a quarter of a century ago: "No matter what you do for carcinoma of the prostate, you do the wrong thing."⁵

INDUSTRIAL HEALTH

The large attendance at virtually all sessions of the Fifth Annual Congress on Industrial Health sponsored by the Council on Industrial Health of the American Medical Association in Chicago, January 11 to 13, may be taken as further evidence of the desire of the medical profession to "pass the ammunition." The papers presented and discussions following extolled the necessity for reducing the loss of working time of industrial workers in

3. Huggins, C.: Effect of Orchidectomy and Irradiation on Cancer of the Prostate, *Ann. Surg.* 115:1192, 1942.

4. Schenken, J. R.; Burns, E. L., and Kahle, P. J.: The Effect of Diethylstilbestrol and Diethylstilbestrol Dipropionate on Carcinoma of the Prostate Gland. I. Clinical Observations, *J. Urol.* 48:99, 1942.

5. Attributed to Dr. Charles Mayo by Alyea, E. P., and Henderson, A. F.: Carcinoma of the Prostate. Immediate Response to Bilateral Orchidectomy; Clinical and X-Ray Evidence, *J. A. M. A.* 120:1099, 1942.

1. Kutscher, W., and Wolbergs, H.: Prostataphosphatase, *Ztschr. f. physiol. Chem.* 236:237, 1935.

2. Gutman, E. B.; Sproul, E. E., and Gutman, A. B.: Significance of Increased Phosphatase Activity of Bone at the Site of Osteoplastic Metastases Secondary to Carcinoma of the Prostate Gland, *Am. J. Cancer* 28:485, 1936.

war industries. It was pointed out again and again that the health of these workers constitute the prime factor affecting the loss of working time. Various plans were presented for securing the co-operation of the medical profession, employers and employees in the solution of the industrial health problems.

Industrial medicine, as discussed, must be concerned primarily with preventive measures, and necessitates further training on the part of the physician who engages in industrial practice. In many states medical schools are offering short post-graduate courses in industrial medicine. In some instances employers are paying the cost of such additional instruction to physicians who are employed full time or even part time to care for the health of the workers in their plants.

Most of the plans presented for carrying out an industrial health program were concerned with the large plants. The pressing unsolved problem seems to be in devising an efficient medical care program for the smaller industrial plants in which it probably is practical to use only a part time physician or physicians. It was proposed that industrial nurses may be utilized to good advantage in both large and small plants.

In the discussion of the training necessary for industrial practice, it was pointed out that the general practitioner is not qualified to take the place of trained industrial physicians in industry. Granting this, the family physician still has the responsibility of aiding in reducing the approximate 85 per cent of absenteeism of the workers which is due to illness other than that caused from industrial plant sources.

Production is a community responsibility and calls for cooperation from all groups. Undoubtedly the medical profession has here another opportunity and responsibility to aid the war effort by initiating programs to improve the health of industrial workers.

PROCUREMENT AND ASSIGNMENT SERVICE IN MISSOURI

The number of physicians needed from Missouri for military service during 1943 is 254 according to Dr. Robert Mueller, Missouri State Chairman of Procurement and Assignment Service. The plan is to draw physicians at the rate of approximately twenty-two a month extending through the year rather than trying to obtain the entire number within a few months at the beginning of the year.

It is estimated that approximately 10,500 physicians still remain in private practice in the United States who could be spared for the armed forces. It is realized, however, that there is a maldistribution of physicians in favor of the large cities and this situation obtains in Missouri as well as in other states. Therefore, most of the 254 physicians going from Missouri must go from the larger cities.

Missouri had contributed approximately 1,050

physicians to the armed forces up to the first of 1943 and on December 1 had filled 109 per cent of its quota, 100 per cent having been reached by October 1.

The chairman of Procurement and Assignment Service in Missouri, the Councilors of the Districts who have been of constant assistance to him and the various committees who have functioned throughout the state are to be highly congratulated on the work of Procurement and Assignment in Missouri during 1942. The needs of the armed forces were cared for according to the requirements set up by military authorities but the state was not drained of physicians thus creating a problem of the care of the civilian population. In a few instances crises have arisen but these have been met by furnishing adequate care for civilian medical needs during wartime. It has been said that war not only creates emergencies but focuses attention on emergencies that already existed and emergencies of medical care did exist in parts of Missouri before the war.

The demands on the Procurement and Assignment Service are far from completed but the record in Missouri during the last year promises work well done during the remainder of the time the service is needed.

Any physician wishing to apply for a commission should communicate with the State Chairman, Procurement and Assignment Service, Robert Mueller, M.D., 3115 S. Grand Blvd., St. Louis; telephone Grand 6035. A physician must be declared available by his local committee, however, before a commission can be granted.

NEWS NOTES

Dr. C. C. Ault, Fulton, was a guest speaker at the meeting of the Rotary Club in Fulton on December 2.

Dr. E. R. King, Nevada, spoke before the Rotary Club in Nevada on December 24 on "History and Progress of Medicine."

Dr. J. Lee Harwell, Poplar Bluff, was appointed to the city board of health of Poplar Bluff on December 30. Drs. A. R. Rowe and W. L. Brandon, Poplar Bluff, are the other members of the board.

The State Board of Health has announced that eighteen physicians have been licensed to practice medicine by reciprocity and three licensed on endorsement of credentials of the National Board of Medical Examiners.

Dr. P. E. Kubitschek, St. Louis, spoke before the Eureka Advisory Committee on Child Welfare Service at the Eureka High School, Eureka, on December 10. His subject was "Care of Children During War Time."

Dr. F. B. Campbell, Kansas City, gave a paper before a staff meeting of the Wesley Hospital, Kansas City, December 16. His subject was "Rectal Diseases and Their Relationship to General Medicine."

Dr. E. A. Belden, Webb City, entertained twenty-six physicians at the Jasper County Health Center, Webb City, on December 22. Dr. E. B. Johnwick, Jefferson City, gave an illustrated lecture on venereal disease control.

A dinner honoring members of the Seventieth General Hospital Unit was given at Hotel Statler, St. Louis, on December 28 by the faculty of St. Louis University, sponsor of the unit. Lieut. Col. Curtis H. Lohr, St. Louis, is director of the unit.

Dr. H. L. Alexander, St. Louis, gave a series of lectures at the Illini Community Hospital, Pittsfield, Illinois, on January 4 and 5. His subjects were "Allergy and General Practice," "Acute Catarrhal Jaundice and Associated Diseases of the Liver" and "Peptic Ulcers."

Dr. William J. Hunt, St. Joseph, was reelected president of the staff of the Missouri Methodist Hospital, St. Joseph, on December 15. Other officers elected were Dr. S. E. Senor, vice president; Dr. Clifton Smith, secretary-treasurer, and Drs. Paul Forgrave, E. M. Shores and E. A. Miller, the executive committee.

Social Hygiene Day, sponsored annually by the American Social Hygiene Association, will be observed on February 3, 1943. Stressing the urgent wartime need for a vigorous offensive against the venereal diseases, the Association's theme for the 1943 campaign will be "Social Hygiene Takes Battle Stations."

The following officers of the staff of the Freeman Hospital, Joplin, were elected on December 10: President, Dr. C. W. Poor; secretary-treasurer, Dr. Frances E. Rosenthal; chairman of the efficiency committee, Dr. O. T. Blanke; chairman of the staff committee, Dr. Charles T. Reid; chairman of the records committee, Dr. Roy E. Myers; chairman of the program committee, Dr. Richard C. Newkirk.

Physicians in military service are not required to comply with the law requiring biennial registration of physicians, according to the State Board of Health. A physician is required, however, to make an affidavit that he is a duly licensed physician and surgeon authorized to practice in Missouri, together with number and date of license, and stating that he is in the armed forces and at any time he reengages in the practice of medicine in Missouri that he will register immediately.

Several women physicians have been elected as officers of component societies recently. Dr. C. Souter Smith, Springfield, was elected president of the Greene County Medical Society at a meeting of the Society on December 30, the first woman to become president of the Society. Dr. Bertha E. S. Sheetz, Trenton, was elected president of the Grundy-Daviess County Medical Society at the December meeting of that Society. Dr. Grace S. Mountjoy, St. Louis, will represent the St. Louis Medical Society as a delegate at the 1943 Annual Session, the first woman delegate the St. Louis Medical Society has had. Dr. Ida May Nulton, Lancaster, has been serving in official positions with the Schuyler County Medical Society, the Adair-Schuyler County Medical Society and the North Central Counties Medical Society since 1930. She has served as president, vice president and delegate and this year is a vice president of the Society.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons is offering a prize of \$150.00 for the best thesis submitted. The following rules govern the contest: (1) The award which shall be known as "The Foundation Prize" shall consist of \$150.00. (2) Eligible contestants shall include only (a) interns, residents or graduate students in obstetrics, gynecology or abdominal surgery, and (b) physicians (with an M.D. degree) who are actively practicing or teaching obstetrics, gynecology or abdominal surgery. (3) Manuscripts must be presented under a nom de plume which shall in no way indicate the author's identity, to the Secretary of the Association together with a sealed envelope bearing the nom de plume and containing a card showing the name and address of the contestant. (4) Manuscripts must be limited to 5,000 words and must be typewritten in double spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis. (5) The successful thesis shall become the property of the association, but this provision shall in no way interfere with publication of the communication in the journal of the author's choice. Unsuccessful contributions will be returned promptly to the authors. (6) Three copies of all manuscripts and illustrations entered in a given year must be in the hands of the secretary, Dr. James R. Bloss, 418 Eleventh St., Huntington, W. Va., before June 1. (7) The award will be made at the annual meeting of the association at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the association. The successful contestant must meet all expenses incident to this presentation. (8) The president of the association shall annually appoint a committee on award, which, under its own regulations shall determine the successful contestant and shall inform the secretary of his name and address at least two weeks before the annual meeting.

DEATHS

Brown, William Byrne, M.D., Columbia, a graduate of Rush Medical College, 1936; member of the Boone County Medical Society; Fellow of the American Medical Association; aged 38; died November 8.

Calhoun, Alan D., M.D., St. Louis, a graduate of Washington University School of Medicine, 1933; Fellow of the American Medical Association; member of the St. Louis Medical Society; aged 36; died December 15.

James, Edwin F., M.D., Springfield, a graduate of the Beaumont Hospital Medical College, St. Louis, 1895; member of the Greene County Medical Society; aged 62; died December 18.

Garner, Royal L., M.D., Milan, a graduate of the Beaumont Hospital Medical College, St. Louis, 1900; member of the North Central Counties Medical Society; aged 81; died January 4.

Glover, Clark S., M.D., Russellville, a graduate of the National University of Arts and Sciences Medical Department, St. Louis, 1901; a member of the Cole County Medical Society; aged 68; died January 5.

INCIDENTALLY

Who will design the pattern for the future trend of medicine?—It was a pleasure to attend a joint meeting of the Camden, Pulaski and Laclede county medical societies held at the Wallace Hospital, Lebanon, on the night of January 5.

It is stated that in foreign countries most of the systems of state medicine began with cash disability benefits only.—Communities without adequate private medical care may be used as arguments for public medicine.—Does not medicine have the ability to adapt itself to changing circumstances?

What are the defects of the present system of medical care?—Observation indicates that people accept health and do very little about it until it is lost.—There are fewer physicians now available for civilian medical care, but, on the other side of the ledger, there are fewer civilians.

Is it not better for the medical profession to regiment itself by uniting than be regimented individually by those waiting to take advantage of disorganization?—Good organization makes for effective action and such action makes unfavorable legislation improbable if not impossible.

Have you thought just what the recent United States Supreme Court decision against the Medical Society of the District of Columbia and the American Medical Association means to the medical profession? Does not this open the way for many types of prepayment medical care plans?

Someone has suggested a golden rule for physicians: "Treat patients as you would have them treat you."—Many will agree that a county medical society is just what the members want to make it.—Some are wondering just why certain eligible

physicians are not members of their respective county societies. Should not each county society actively engage in a membership drive at this time? An effective campaign of this kind has every chance to strengthen organized medicine for its present and future fight to maintain the basic principles of medical care through which American people have become the best cared for in the world.

MISCELLANY

UNSUNG HEROES

The following appeared in the *St. Louis Globe-Democrat* on January 17.

Among the unsung heroes of this war are the doctors who serve mankind right here at home. Not able to enter into the service for our armed forces because of family dependents, or age, they've gallantly taken on three or four times the practice to which they were accustomed (and physically conditioned) during peace time, and they are working at such breakneck speed that their energy and their health are fast becoming affected.

Up in the morning at 6 o'clock when the skies are as black as pitch . . . off to the hospital to perform two or three operations . . . house visits here and there, and all over the town on patients too ill to come to the office, or loathe to use their gas . . . emergency calls catching up with them at every stop. . . . A dash to the office where 30 or more irritable people await to recount their ills and their woes—even their financial or domestic troubles . . . constant demands on the telephone . . . a bite of uninteresting food sent in from a near-by drugstore, sandwiched between patients, swallowed in gulps. . . . At last, a brief breathing space when the last patient has finally been cared for . . . but more calls to be made on the bed-ridden . . . then afternoon office hours again (this time from 4 o'clock till heaven knows when), with emergency requests pouring in to "come here—come there at once—at once!"

No time for dinner, no time for family, no time for home. . . . They're worked beyond all human capacity, these soldiers of the medical profession, in their gallant and uncomplaining service to mankind on the home front. . . . A salute to them, and "God bless you, every one!"

LEGISLATION FEDERAL

Seventy-Eighth Congress

In the Seventy-eighth Congress, now in session, Representative Tolan of California has reintroduced his bill to permit chiropractors to treat beneficiaries of the United States Employees' Compensation Act.

In the Seventy-sixth Congress, the House Committee on the Judiciary held a public hearing on a similar bill introduced by Representative Tolan but took no further action on it. In the Seventy-seventh Congress, the Tolan bill was reintroduced and referred to the House Committee on the Judiciary. The Committee decided not to hold public hearings on the bill and during the early summer of 1942 the measure was reported favorably to the House. It died on the House Calendar when the Congress adjourned December 16. The present bill is identical with the one reported to the House in the Seventy-seventh Congress and is pending in the House Committee on the Judiciary. It proposes to redefine, as used in the United States Employees' Compensation Act, the terms "physician" and "medical, surgical and hospital services and supplies" as follows, the italicized words representing the proposed changes:

"The term 'physician' includes surgeons and osteopathic and chiropractic practitioners licensed by state law and within the scope of their practice as defined by state law.

"The term 'medical, surgical and hospital services and supplies' includes services and supplies by osteopathic and chiropractic practitioners and hospitals as licensed by state law and within the scope of their practice as defined by state law."

Seventy-Seventh Congress

The Seventy-seventh Congress adjourned December 16 after having been in continuous session since January 3, 1941. During this time numerous bills of medical interest, a few of major importance, were considered by the Congress, a large majority of which failed to receive favorable action. In fact, few measures of medical interest passed other than those associated with the general war effort. A brief summary of the action taken by the Congress on some of the proposals follows.

The bill that was introduced to protect diabetic patients from impure insulin became a law. Under this law, insulin will be distributed under regulations promulgated by the Federal Security Agency. The enactment of this legislation became necessary because of the expiration of the insulin patent under which the purity and potency of insulin has heretofore been regulated.

Federal funds, to the extent of \$5,000,000, were made available for loans to students pursuing accelerated medical courses and certain other designated technical courses. Likewise additional funds were made available to the United States Public Health Service for the training of nurses to augment the supply depleted by the demands of the military program.

Numerous bills were submitted to broaden the field of operation of the Social Security Act. Bills were proposed to amend the act so as to provide medical care for recipients of public assistance, to provide additional aid to the blind, to provide aid to permanently and totally disabled individuals, to bring within the coverage of the act certain employees now excluded such as employees of charitable, religious, scientific, literary or educational institutions, but none of these received favorable consideration. Late in the session Representative Eliot introduced his bill to amend and extend the provisions of the Social Security Act to include, among other things, sickness and hospitalization benefits. While this measure was apparently not officially sponsored, it did undertake to effectuate some of the recommendations submitted by the President in his Budget Message in the early days of the Congress. No action was taken on the bill and it died in the House Committee on Ways and Means.

The Congress took no action on bills to establish a Chiroprody Corps in the Medical Corps of the Army and to require the appointment of a chiroprapist in each base hospital or training camp. Meeting similar fates were proposals to establish a Pharmacy Corps in the Army, to place a registered pharmacist in charge of army dispensaries and to appoint an officer of the Veterinary Corps as assistant to the Surgeon General of the Army with the rank of Brigadier General. During the early days of the Congress legislation was proposed to open the ranks of the Army Medical Corps to graduates of unapproved medical schools but no action was taken on it.

Persistent efforts were made by the chiropractors to secure the enactment of the Tolan bill to amend the United States Employees' Compensation Act so as to authorize adherents of this cult to treat beneficiaries of the act, the bill being identical with the measure sponsored by Representative Tolan in the Seventy-sixth Congress. This legislation died on the calendar of the House of Representatives. The osteopaths were likewise persistent in their demands for recognition at the

hands of Congress and were successful to the extent that the Surgeon General of the Army was authorized to appoint osteopaths as interns in army hospitals and to the extent that authorization was included in a bill providing appropriations for the Navy Department for the use of funds "for the pay of commissioned medical officers who are graduates of reputable schools of osteopathy." No osteopath has been appointed as an intern in an army hospital nor are osteopaths eligible for appointment in the Medical Corps of the Navy. The authorizations given by the Congress are permissive in form only.

While the so-called Wagner-George hospital construction bill received no consideration by the Congress, the Lanham bill became a law by virtue of which considerable federal funds were made available for the construction, in distressed areas, of needed public works, including hospitals, health facilities and clinics. Under this legislation, hospitals, clinics and other health facilities were augmented in many states in areas where existing facilities had proved totally inadequate to serve the influx of population due to defense activities. Additional funds, too, were made available to the Veterans' Administration, \$4,557,000 to be exact, for major reconditioning, replacements and new construction of hospitals and domiciliary facilities for veterans. Other bills proposing the construction of veterans' hospitals in particular communities or states failed of enactment.

The President submitted to the Congress a recommendation for such additional appropriations as the Children's Bureau might need during the emergency for allotment to the states for maternal and child welfare purposes. Some of this money, it was contemplated, was to be used in providing medical, hospital, obstetric and pediatric care for the wives and children of men in military service. Companion bills were introduced to effectuate this recommendation but Congress failed to act on them. The Children's Bureau did, however, set aside a part of its regular appropriations for allotments to the states to provide the indicated services for the wives and children of servicemen.

A bill proposing to establish a Federal Department of Health in which could be combined the public health activities carried on by the various branches of the government failed of enactment. Likewise no action was taken on another bill, sponsored by the Federal Security Agency, to effect a reorganization of the United States Public Health Service.

The Soldiers' and Sailors' Civil Relief Act was variously amended to provide additional civil relief for persons in military service. Of particular interest to the medical profession is a provision in the amendatory act under which leases for office space entered into by persons who thereafter go into military service may be cancelled.

The new Revenue Act will greatly increase the tax burden of physicians as it will other federal income taxpayers. It does not effect any changes in the deductions that a physician may claim on account of professional activities. It does impose an obligation on physicians who have in their employ persons receiving wages in excess of \$12 a week a duty of withholding the victory tax. The new act eliminates an injustice that has obtained for a number of years in the manner in which outstanding accounts on the books of a taxpayer at the time of his death have been treated for income tax purposes. Hereafter such unpaid accounts will not be considered as part of the income of the decedent for the year of death, as has heretofore been the case, but will be taxable when paid, as a part of the income of the person who receives the money. A provision in the new law authorizes a taxpayer to deduct amounts expended for medical, dental and hospital care to the extent that such expenses exceed 5 per cent of the net income of the taxpayer but not in excess of \$2,500 in case of the head of a family, or \$1,250 in case of other individual taxpayers.

COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL 1943

(SOCIETIES WHICH HAVE PAID DUES FOR ALL
MEMBERS AND DATE PLACED ON HONOR ROLL)

HONOR ROLL

- Perry County Medical Society, November 24, 1942.
Benton County Medical Society, November 27, 1942.
Chariton County Medical Society, November 28, 1942.
Camden County Medical Society, December 3, 1942.
Miller County Medical Society, December 3, 1942.
Barton County Medical Society, December 4, 1942.
Scott County Medical Society, December 8, 1942.
Montgomery County Medical Society, December 9, 1942.
Moniteau County Medical Society, December 14, 1942.
Cass County Medical Society, December 17, 1942.
Ste. Genevieve County Medical Society, December 21, 1942.
Howard County Medical Society, December 24, 1942.
Webster County Medical Society, December 29, 1942.
Carter-Shannon County Medical Society, January 7, 1943.

ASSOCIATE EDITORS: COUNCILORS OF THE TEN COUNCILOR DISTRICTS

FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR

Buchanan County Medical Society

The Buchanan County Medical Society met at the Missouri Methodist Hospital, St. Joseph, on December 2.

Dr. A. R. Timmerman, St. Joseph, was installed as president. Officers elected were: President-Elect, Dr. L. C. Bauman; vice president, Dr. Claude S. Grant; secretary, Dr. O. E. Whitsell, reelected; treasurer, Dr. J. M. Bell, reelected; delegate, Dr. A. B. McGlothlan; member of committee on public policy, Dr. E. E. Wadlow; board of trustees, Dr. W. J. Hunt, for five years, Dr. Clifton Smith, for two years, Dr. E. M. Shores, for six years; censors, Dr. H. S. Conrad, for three years, and Dr. A. B. McGlothlan, for four years.

O. E. WHITSELL, M.D., Secretary.

Grundy-Daviess County Medical Society

The Grundy-Daviess County Medical Society held its December meeting in the Trenton Trust Company Building, Trenton.

The following officers were elected: President, Dr. Bertha E. S. Sheetz, Trenton; vice president, Dr. E. C. Ambrose, Trenton; secretary-treasurer, Dr. E. A. Duffy, Trenton; member of board of censors, Dr. O. R. Rooks, Trenton; delegate, Dr. O. F. Duffy, Trenton; alternate, Dr. W. A. Fuson, Trenton.

E. A. DUFFY, M.D., Secretary.

Mercer County Medical Society

The Mercer County Medical Society met on December 17 with the following members present: Drs. T. S. Duff, Cainsville; C. P. Pickett, C. J. Laws, E. W. Stacy, A. S. Bristow and J. M. Perry, Princeton. Dr. C. R. Buren, Princeton, was a visitor.

After discussion it was decided that the Society should cooperate with the state child hygiene plan and the hospital selected be left to the discretion of the attending physician.

The Procurement and Assignment Service was discussed by Drs. C. J. Laws, A. S. Bristow and C. R. Buren.

J. M. PERRY, M.D., Secretary.

SECOND COUNCILOR DISTRICT

H. B. GOODRICH, HANNIBAL, COUNCILOR

North Central Counties Medical Society

The North Central Counties Medical Society met at the Grim-Smith Hospital, Kirksville, on December 3 for a dinner meeting as guests of the hospital.

The secretary reported on the activities of the Society during the last year.

The following officers were elected: President, Dr. A. B. Cramb, Kirksville; vice presidents, Drs. H. M. Humphrey, Brashear; F. E. Lumen, Edina; Ida M. Nulton, Lancaster; P. V. Hart, Coatsville; J. S. Montgomery, Milan; secretary-treasurer, Dr. A. F. Miller, Kirksville; censor, Dr. H. T. Garrison, Novinger.

Following the business meeting Mr. Raymond McIntyre, St. Louis, Acting Executive Secretary, addressed the meeting.

Dr. George Grim, Kirksville, showed two reels of motion pictures.

A. F. MILLER, M.D., Secretary.

Randolph-Monroe County Medical Society

The Randolph-Monroe County Medical Society met December 17 in Moberly.

The State Board of Health program for care of wives and infants of men in service was discussed.

The following officers were elected: President, Dr. F. A. Barnett, Paris; vice president, Dr. R. H. Williams, Moberly; secretary-treasurer, Dr. F. L. McCormick, Moberly; delegate (Randolph County), Dr. Philip V. Dreyer, Huntsville; alternate, Dr. F. L. McCormick, Moberly; delegate (Monroe County), Dr. F. A. Barnett, Paris; alternate, Dr. M. C. McMurphy, Paris; censors, Drs. L. E. Huber, Moberly; M. C. McMurphy and F. A. Barnett, Paris.

The following were present at the meeting: Drs. P. V. Dreyer, Huntsville; F. A. Barnett and M. C. McMurphy, Paris; J. W. Winn, Higbee; L. E. Huber, M. E. Leusley, M. R. Noland, C. C. Smith, R. D. Streeter, L. O. Nickell, T. S. Fleming, R. H. Williams and F. L. McCormick, Moberly.

F. L. MCCORMICK, M.D., Secretary.

FIFTH COUNCILOR DISTRICT

W. A. BLOOM, FAYETTE, COUNCILOR

Audrain County Medical Society

The Audrain County Medical Society met jointly with the staff of the Audrain County Hospital in Mexico on December 16.

The following officers were elected: President, Dr. Harry F. O'Brien, Mexico; vice president, Dr. W. W. Bland, Vandalia; secretary, Dr. R. S. Williams, Mexico; delegate, Dr. Fred Griffin, Mexico; alternate, Dr. J. F. Harrison, Mexico; member of board of censors, Dr. T. W. Dwyer, Vandalia.

R. S. WILLIAMS, M.D., Secretary.

Callaway County Medical Society

The Callaway County Medical Society met at the Callaway Hospital, Fulton, for its annual meeting.

The following officers were elected: President, Dr. C. C. Ault, Fulton; vice president, Dr. Henry Durst, Fulton; secretary, Dr. R. N. Crews, Fulton; treasurer, Dr. Henry Durst; delegate, Dr. R. N. Crews, Fulton; alternate, Dr. C. C. Ault, Fulton.

Those present at the meeting were: Drs. G. D. McCall, C. C. Ault, J. J. Blasko, Henry Durst, P. S. Tate, H. I. Owen and R. N. Crews, Fulton; E. M. Rusk, New Bloomfield; C. B. Nichols, Auxvasse.

Dr. C. C. Ault was elected to membership by transfer. The dues of Dr. J. J. Brown who has been in the armed service since March, 1941, were remitted for the years 1942 and 1943.

R. N. CREWS, M.D., Secretary.

Howard County Medical Society

The Howard County Medical Society met at Fayette on December 10.

The plan of the State Board of Health for the care of wives and infants of men in military service was discussed.

Dr. J. W. Gardner, Glasgow, was elected president of the Society and Dr. M. P. Leech, Fayette, secretary.

M. P. LEECH, M.D., Secretary.

SIXTH COUNCILOR DISTRICT

A. J. CAMPBELL, SEDALIA, COUNCILOR

Cass County Medical Society

The Cass County Medical Society held its annual dinner meeting at the Harrisonville Methodist Church, Harrisonville, on December 10. Members of the Woman's Auxiliary were guests.

Dr. E. A. Albers, Pleasant Hill, presided at the dinner. The Rev. Charles R. Swofford, Harrisonville, gave the invocation. During the dinner Mrs. David S. Long, Harrisonville, read "The Prayer of a War Doctor" and Mrs. M. P. Overholser, Harrisonville, recited Longfellow's "The Three Kings."

Mr. Raymond McIntyre, St. Louis, was introduced by Dr. David S. Long, Harrisonville, and spoke on "Problems Facing Organized Medicine."

Dr. Joseph E. Welker, Kansas City, spoke on "Nephritis."

The following officers were reelected: President, Dr. L. V. Murray, Pleasant Hill; vice president, Dr. E. A. Albers, Pleasant Hill; secretary-treasurer, Dr. David S. Long, Harrisonville; censor for three years, Dr. B. O. Hartwell, Drexel; delegate, Dr. David S. Long, Harrisonville; alternate, Dr. R. M. Miller, Belton.

DAVID S. LONG, M.D., Secretary.

EIGHTH COUNCILOR DISTRICT

WALLIS SMITH, SPRINGFIELD, COUNCILOR

Greene County Medical Society

The Greene County Medical Society met at the Public Library, Springfield, on December 30.

The following officers were elected: President, Dr. C. Souter Smith, Springfield; vice president, Dr. L. H. Heimburger; treasurer, Dr. J. S. Sartin; secretary, Dr. A. Denton Vail; delegates, Drs. F. T. H'Doubler and W. S. Sewell.

A. DENTON VAIL, M.D., Secretary.

TENTH COUNCILOR DISTRICT

E. J. NIENSTEDT, SIKESTON, COUNCILOR

Ste. Genevieve County Medical Society

The Ste. Genevieve County Medical Society met on December 16, Dr. R. C. Lanning, Ste. Genevieve, presiding.

The following officers were elected: President, Dr. A. E. Sexauer, Ste. Genevieve; vice president, Dr. C. J. Clapsaddle, Ste. Genevieve; secretary-treasurer, Dr. Robert W. Lanning, Ste. Genevieve; censor Dr. R. W. Lanning; delegate, Dr. J. A. Wilkins, St. Marys; alternate, Dr. R. C. Lanning, Ste. Genevieve; committee on public health and legislation, Drs. J. A. Wilkins, St. Marys; C. J. Clapsaddle and Robert W. Lanning, Ste. Genevieve.

ROBERT W. LANNING, M.D., Secretary.

Scott County Medical Society

The Scott County Medical Society met at the Sikeston Public Library, Sikeston, on December 2.

The following officers were elected: President, Dr. G. W. H. Presnell, Sikeston; vice president, Dr. J. A. Cline, Oran; secretary, Dr. W. O. Finney, Chaffee; board members, Dr. A. A. Mayfield and Dr. E. J. Nienstedt, Sikeston.

W. O. FINNEY, M.D., Secretary.

BOOK REVIEWS

THE HISTORY AND EVOLUTION OF SURGICAL INSTRUMENTS.

By Dr. C. J. S. Thompson. With a Foreword by Dr. Chauncey D. Leake. New York: Schuman's. 1942.

This excellent little book contains an account of the evolution of surgical instruments as illustrated by examples formerly in the museum of the Royal College of Surgeons of England. With Dr. Thompson as curator, this collection had grown to number about three thousand examples when early in 1941 a Nazi air raid destroyed a major portion of it. About half of the specimens were salvaged in fair condition and have since been stored away in a safe place to be reconditioned after the war. The remainder were irretrievably lost.

Dr. Thompson, from his intimate knowledge of the contents of the collection, has compiled this record. He traces the scalpel from 330 B.C. up to the present time; the amputation knife from Susruta to Liston; and begins the story of the saw in 2700 B.C. The period from Trepan to trephine covers almost two thousand years. The development of the vaginal speculum begins in the early centuries of the Christian era and extends to the time of our own Marion Sims, who invented the right angled vaginal speculum in 1845. Other examples are the development of bullet extractors, tourniquets, phlebotomy instruments, trocars and operating tables.

Well bound, beautifully printed and illustrated, this book would be an addition to the library of any student of medical history.

R. G. H.

STANDARD NOMENCLATURE OF DISEASE AND STANDARD NOMENCLATURE OF OPERATIONS. Edited by Edwin P. Jordan, M.D. Chicago: American Medical Association. 1942.

This is the third edition of a work which has become standard in the better hospital record libraries throughout the country. It represents an attempt to develop a logical and uniform nomenclature for all diseases, an effort which merits the whole hearted support of the medical profession.

Every physician should study the composition of this book and should endeavor to make his diagnosis conform to the nomenclature contained in it. The basis of the book is the double classification of disease, e. g., anatomic and etiologic, which is perhaps as close to ideal as one can come at present, and arranged so as to permit the inclusion of new diseases and diagnoses should the need arise.

It would be futile and unnecessary to go into a lengthy discussion of the mechanism involved in ascertaining the proper classification of a particular disease. It is recommended that the physician read "Introduction" and "Instructions to the Record Librarians" in this book. These explain in detail the method to be followed and show how simply this can be done.

In a work of this kind certain discrepancies and inconsistencies are bound to arise but in a rather careful examination of the contents remarkably few were found.

In the new edition there is a classification of operations and this feature will appeal to the surgeon.

Praiseworthy and desirable is the elimination of "personal diseases," that is the elimination of diagnoses bearing the name of one or more discoverers. Such diagnoses are not considered standard. For those physicians who are accustomed to using diagnoses bearing proper names, a table of eponymic diseases is included which gives the preferred nomenclature.

I feel justified in urging every physician to spend sufficient time in reading the book and in discussing it with his record librarian to become entirely familiar with "Standard Nomenclature of Disease and Standard Nomenclature of Operations." R. O. M.

SUFANILAMIDE AND RELATED COMPOUNDS IN GENERAL PRACTICE. Wesley W. Spink, M.D., F.A.C.P., Associate Professor of Medicine, University of Minnesota Medical School. Chicago: The Year Book Publishers, Inc. 1942. Price \$3.00.

This second edition is similar in many respects to the previous treatise on sulfonamide therapy. The same general plan has been followed in this book as in the previous edition; namely, introducing the reader to the sulfonamide by first discussing the historical development, then the general considerations of sulfonamide compound. The book is divided so that the general principles of therapy are explained first, and then each chapter is devoted in fullest detail to the treatment of certain specific types of infections; namely, beginning with streptococcus infections in general; staphylococci, meningococci and then taking the various systems of the body such as the genito-urinary system and evaluating the use of the drug in the infections that one encounters in clinical practice. Chapters also are devoted to the local application, prophylactic use, use in dentistry and, in conclusion, a chapter devoted to the symptoms of toxicity of sulfonamide groups.

This is indeed a worth while book. It is clearly written and easy to understand. Throughout the author makes no attempt at being dogmatic in the use of sulfonamides but merely evaluates for the reader the various drugs and the conditions in which they are used most suitably. He has drawn these opinions from widespread clinical use in large hospitals where accurate records have been maintained at all times.

This book, as the first one, is invaluable to the practicing physician particularly since the sulfonamide groups are used so extensively. A. E. U.

THE MANAGEMENT OF OBSTETRIC DIFFICULTIES. By Paul Titus, M.D., Obstetrician and Gynecologist to the St. Margaret Memorial Hospital, Pittsburgh; Consulting Obstetrician and Gynecologist to the Pittsburgh City Homes and Hospital, Mayview, and to The Homestead Hospital, Homestead, Pa.; Secretary of The American Board of Obstetrics and Gynecology. With 368 Illustrations and Five Color Plates. Second Edition. St. Louis: The C. V. Mosby Company. 1940. Price \$10.00.

This satisfying book reached its second edition very rapidly. It has met with the approval of educators and specialists in this line and it is also highly pleasing to students. It is becoming more of a textbook than originally intended.

Seventy-five new illustrations have been added, with several deletions. The book contains eighty-eight more pages than the first edition.

The eight sections remain the same with liberal and good art and photography. Additions are noted on causes of sterility, chemotherapy of puerperal sepsis, more detailed technic of roentgen ray pelvimetry, recent advances in the various operative procedures, in management of toxemias and anemias of pregnancy.

He is still recommending decomposition of breech presentations at or near full dilatation and admits he is still open to criticism but continues to believe as he does with Irving.

The book remains a treasury of sound exposure and more than adequate therapeutic guide. A. B. S.

THE HAND. Its Disabilities and Diseases. By Condict W. Cutler, Jr., M.D., F.A.C.S., Associate Surgeon, Roosevelt Hospital; Director of Surgery, Welfare Hospital, Consulting Surgeon, New York Dispensary, Chief, Emergency Medical Service, New York County, etc. With 274 Illustrations. Philadelphia and London: W. B. Saunders Company. 1942. Price \$7.50.

This text is an excellent scientific contribution to medical literature.

The book is brief, to the point and covers the subjects thoroughly. Every sentence gives a complete description of the point in question.

The illustrations are highly descriptive of the pathological conditions as they are found in actual practice.

The value of the book lies in the fact that an immense amount of knowledge is conveyed to the surgeon in the shortest space of time, something found in but few works, either medical or otherwise. J. W. G.

BASIC PROBLEMS OF BEHAVIOR. By Mandel Sherman, M.D., Ph.D., The University of Chicago. New York, London, Toronto: Longmans, Green and Co. 1941. Price \$3.00.

This book of 434 pages is intended "to present the clinical, experimental psychological and psychiatric data of a number of basic problems of behavior." Some subjects discussed are the emotions, motivation and frustration, theories of personality, common mechanism of adjustment, the measurement of personality, attitudes, conflicts, delinquent behavior, the neuroses and mental abnormalities.

There are sixteen pages of bibliography. The book is therefore in the nature of a general discussion and summary of the status of the subject at the present moment. It is competently done and should be eminently useful as a guide to further study and investigation of the subject. The physician with access to the literature will find such study an interesting and sometimes helpful diversion. L. B. A.

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SYMPOSIUM ON PEDIATRICS

PROTECTING THE NEWLY BORN INFANT FROM TUBERCULOSIS

PARK J. WHITE, M.D.

ST. LOUIS

WHAT OF THE PRESENT?

The tubercle bacillus, like everything else, is on the march. It may well be expected to take advantage of the crowding of homes and nurseries; of the rapid increase in industrial employment of women; of the abrupt rise in the marriage and birth rates in this country during the last year. (In 1941 there were 2,300,000 births in this country.)

In November 1942, Sir John Orr, of Scotland, addressing the Academy of Pediatrics, in Chicago, said that in his country, war-ridden for two years, the infant mortality rate has climbed from 55 per 1,000 to 80.

America may well ponder these figures—bearing in mind that the time for pondering is limited. Even confining attention to tuberculosis, there are other figures which should not be overlooked. Consider the Negro group in this country, for example. If crowding, if poor housing is harmful to white children, what is found among the Negroes who are obliged to live under so much worse conditions? The Negro death rate from tuberculosis averages from three to four times that of the white race. Exhaustive studies have shown that when all factors, including the economic, are considered, Negroes are at present more susceptible than white people to the disease. So, naturally, a study by Brailey¹ of infants in New York is illustrative: at one year and at five years after tuberculin tests were found to be positive, twice as many Negro infants as white had died.

In an admirable chapter on tuberculosis in infancy, J. A. Myers² writes, "There is fair evidence to show that the younger the infant is when infection occurs, the less favorable the prognosis." He

adds that occasionally one sees infants infected under the age of 6 months who do not develop tuberculous disease.

Thus, there is no doubt that those who would prevent the spread of tuberculosis must regard early infancy—particularly the period of the newly born—as an extremely important age on which to concentrate. Conditions prevailing during and immediately following a war favor the incidence of tuberculosis as does also the factor of race.

WHAT SHALL HOSPITALS DO ABOUT IT?

First, those concerned must do everything possible to prevent such an occurrence as the following: At the age of 1 year an infant was examined because of many complaints including fever of 100 F. and lack of appetite (but not cough or loss of weight). A routine tuberculin test was positive—and was the only significant finding. The chest, of course, was roentgen rayed and a small shadow seen in the right lower lobe with slight enlargement of the corresponding hilar lymph node. The family contacts—parents, grandparents and maid—were examined by the family physician and no history or evidence of communicable tuberculosis was revealed. Shortly afterward, on visiting the hospital in which this infant had been born, I found that the "nursery nurse" who had cared for her had been sent to a sanatorium with moderately advanced tuberculosis. A number (impossible to determine accurately) of other infants for whom this nurse had cared also were found to be infected. Fortunately, the infant under consideration had a mild "first infection" and good resistance. Subsequent roentgen rays have shown arrest of the process. If reinfection can be avoided, her outlook is good.

Now, this nurse, be it noted, had had a careful physical examination and roentgen ray of her chest one year prior to the discovery of her active infection.

A painfully similar sequence of events occurred in another hospital with which I am connected when an intern serving in the nursery for the newly born infants was found to have active tuberculosis with positive sputum. He had been examined and roentgen rayed at the beginning of his hospital work.

The great majority of hospitals now require preliminary and periodic examination of all personnel including maids and attendants. Could anything require more vigilance and conscientiousness on the part of hospital authorities?

WHAT SHALL OBSTETRICIANS DO ABOUT IT?

The duty of the obstetrician is clear. Obviously he must discover, or if necessary have an internist discover, any communicable, active tuberculosis in his pregnant patient. If he knows such active infection to exist, he must isolate the baby from the mother immediately after delivery. Whether or not interruption of pregnancy is indicated depends upon the individual case, as does also the advisability of avoiding future pregnancies.

The Contact Infection Committee of the Academy of Pediatrics, at its meeting in Chicago, November 1942, added tuberculin testing and chest roentgen raying of pregnant women to its program for the eradication of tuberculosis in children. Does this mean that pediatricians are telling obstetricians what to do? No—just urging, or shall one say, beseeching?

Now the idea that "a positive tuberculin test in an adult means nothing" has long since been abandoned. It means that the chest should be roentgen rayed and, if anything significant is found, the sputum, if obtainable, should be examined for

tubercle bacilli. And in whom is such procedure more important than in the pregnant woman? And to whom is it more important than to her newly born baby?

Objection may properly be raised that a strongly positive intradermal tuberculin test (perhaps 5 to 10 per cent more accurate than the patch test) could light up a quiescent process and result in harm to both mother and child. Where this is feared, the patch test should be performed.

WHAT SHALL PEDIATRICIANS AND GENERAL PRACTITIONERS DO ABOUT IT?

In such a plan for routine tuberculin testing and chest roentgen raying of pregnant women, one has but another application of the accepted principle of preliminary and periodic examination of all adults who come into contact with children. Routine roentgen raying of the chests of army inductees has served to bring this fact home.

As the demands of the armed forces reduce the supply of physicians, more and more work of this kind must be performed by the various public health agencies. Of these, none is more alive to the situation than is the Children's Bureau in Washington.

If any good can come to a people from adjustment to war, it should be its awakening to the value of preventive medicine. The greater need for preventive medical measures coincides, it is true, with overwork and undersupply of doctors. But that must not preclude putting into effect the relatively simple procedures necessary to keep the newly born infant from contracting tuberculosis.

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THE PATHOGENESIS OF JAUNDICE OF THE NEWBORN INFANT

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ST. LOUIS

Recent advances in the classification, etiology and treatment of the more serious diseases of the newborn infant warrant a revaluation of the presence of icterus neonatorum.

Jaundice is a term used to designate a yellow orange discoloration of the skin. This is produced by bile pigment spilled over from the already overtaxed blood plasma. Normally in the infant the biliary pigment of plasma may reach from 5 to 12 milligrams per 100 cc. before there is visible discoloration of the skin. Jaundice is caused basically by the production of a greater amount of pigment than the liver is capable of handling or delivering

through its outlets to the intestine. Too great a destruction of red blood cells, liver insufficiency or biliary obstruction will produce jaundice. All three factors may be present to produce this condition.

Jaundice of the newborn infant may be produced by infections. A test for syphilis is indicated on every mother of a baby with jaundice. Sepsis is sometimes the producer of these findings. When the jaundiced baby has fever, a blood culture always should be taken. It is true that icteric babies do become dehydrated easily and as a result become febrile but this assumption is not justified until a blood culture has been found negative. Septic jaundice and syphilitic jaundice are associated with acute hepatitis. These today are rare in

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cases in which aseptic deliveries are done on thoroughly examined expectant mothers. It is the woman with infection herself such as streptococcal nasopharyngitis whose baby develops sepsis. The route is frequently through the vagina where such conditions as marginal placenta previa or early rupture of the membranes have existed. Fever or jaundice of the newborn infant certainly indicates the need for a blood culture.

The occurrence of the jaundice in these two conditions depends on the time of involvement with the infection and, hence, may be present at birth or develop any time thereafter. Jaundice occurs in the newborn infant, however, in cases in which there is neither disease nor excessive blood destruction. In these cases the excess bile pigment is present due to mechanical interference with the flow of bile from the liver to the intestines. Obstructive jaundice of the newborn infant, congenital obliteration of the bile ducts, congenital biliary cirrhosis, are characterized usually by colorless stool (occasionally a green stool is passed) associated with excessive biliary pigment in the urine, a palpable liver, usually only slight enlargement of the spleen, emaciation and a relatively stationary state of jaundice of the skin after the first two to three weeks of life. This jaundice comes on slowly after the first five days of life. It presents much the same picture as that produced by tumor or stone in the adult. This type of jaundice develops slowly in the newborn period with relatively few symptoms associated with it during the first week. After a rather protracted course death is inevitable for rarely are any of the ducts found patent. Sometimes the ducts from the liver to the gallbladder are open and cure may be brought about by an anastomosis of the gallbladder to the duodenum or stomach.

Unlike the hemolytic jaundices these cases are not emergencies. After sufficient examination and laboratory work has proven this the diagnosis, these infants should be directed to competent hands for laparotomy. By competent hands, is meant a surgeon sufficiently skilled in child surgery. Jaundice with the presence of clay colored stools with an essentially normal blood picture and a negative Wassermann is pathognomonic of congenital obstruction. The Vandenburg test, probably the best known laboratory procedure for distinguishing types of jaundice, is not too valuable. Overwhelming hemolytic destruction may so plug the bile ducts that sufficient diffusible bile is present in the blood to give a prompt direct reaction which in the adult would always mean true obstruction.

Hemolytic icterus of the newborn infant has become extremely more important today as statistics demonstrate the increase in the occurrence of the serious types and the high mortality rate. While erythroblastosis was once considered as occurring once in every two to three thousand deliveries it now is being reported in such instances as once in every three to four hundred deliveries. In this classification lies both the simple so-called physi-

ologic jaundice of the newborn infant and the very serious group of syndromes probably best known today as icterus gravis (erythroblastosis foetalis). All babies are thought to be slightly jaundiced from the third to the sixth day of life. This jaundice, occurring not earlier than the third day and not later than the fifth day, has as a result of its frequency and its lack of seriousness been called physiologic jaundice. Although this has been accepted opinion, I do not wholly agree. First its incidence is not nearly sufficient to justify considering it as generally embracing all babies. Its presence much more frequently in the weak and premature does not justify the term physiologic. Some slight liver insufficiency must be present. The result is an inability to handle the biliary pigment produced by the destruction of the unnecessary abundant cells in the baby's circulation. When this comes to an end the condition improves. The presence of a high prothrombin time found during the course is evidence of liver insufficiency of more than just biliary output. Hemorrhage from traumatized blood vessels of the brain or hemorrhage from a circumcision is more likely in these cases. They should, therefore, be handled carefully and given a dietary supplement such as choline chloride and, in severe cases, 5 per cent glucose in Hartmann's solution by hypodermoclysis. Choline chloride is, from present knowledge, an aid to liver function by its role in fat metabolism and is effective in increasing the rate of disappearance of jaundice in protracted¹ cases of so-called physiologic jaundice.

Hemolytic jaundice occurring before the second day of life, even at birth, in cases in which sepsis and syphilis are ruled out, strikes a more serious note as does jaundice which continues to increase rapidly in intensity or fade only to be replaced by extreme paleness. These are signs of that group of idiopathic hemolytic icterus of the newborn infant which, because of the high mortality rate, have been called "icterus gravis" and, because of its association with varying amounts of erythroblasts or nucleated red blood cells in the circulatory blood, have been described by the hemocytologist as erythroblastosis foetalis. Diamond, Blackfan and Baty in 1932² published an extensive treatise demonstrating these two hitherto separately described entities to be one and the same disease. They further demonstrated universal edema or hydrops foetalis (a condition in which the baby, usually dead, appears like a swollen sack of water because of the massive destruction of blood) to be the fetal form of the disease. The mild form in which the destruction of blood is slow and little jaundice ensues has been spoken of as "anemia of the newborn." These conditions are the clinical manifestations of the rapid destruction of the infant's blood cells before or shortly after birth freeing a tremendous amount of biliary pigment to the liver. The liver, because of the overload or because of congenital or acquired insufficiency, is unable to handle this. Two factors then are associated with the fatal outcome of the disease. The first is the

destroyer of the red blood cells. Recent work gives evidence that this may be associated with the presence of an agglutinin to the baby's blood cells in the baby's circulation as was suggested theoretically by Darrow.³ A specific antigen Rh has been described by Landsteiner⁴ and demonstrated in a large percentage of these cases by Levine.⁵ From personal experience and study of this phase of the etiology, an Rh investigation* should be made as an assistance in anticipating this condition in the newborn infant when the mother has received repeated blood transfusions or when these are anticipated or when she previously has given birth to dead or severely icteric babies. By itself, the study of the Rh factor is not diagnostic or truly prognostic in my experience but, like any laboratory procedure, adds weight to the expectant possibilities of the disease occurring. Besides bile pigment, metabolism of carbohydrate, fat and prothrombin in the liver is impaired.

There is evidence of liver damage and impairment of function in this disease as has been demonstrated. There has been recent evidence that in other conditions the rapid break down of hemoglobin produces toxic injury to the liver and kidney although the exact mechanism of this is still unknown. This could easily be true in these cases. Proving that this is the etiology is impossible until further biochemistry studies of hemoglobin and its intermediary products increase the knowledge of this subject.

Only cognizance of the disease and possible recognition of it in the delivery room or soon after birth will save the more severe cases. Every baby born icteric or edematous or developing these in the first forty-eight hours of life should have at least a finger stick for a red blood count, a white blood count and a differential. These are the more important. Hb estimates usually are inaccurate or require more blood than can be obtained easily from the finger tip or toe. A white blood count of

*Numerous laboratories are in a position to make this study today. At present Dr. Gallagher and myself of the Bacteriology Department of St. Louis University would be glad to do so for its academic value. Five cc. of whole clotted blood (sent in a Wassermann tube) from both parents with a clinical history is all that is necessary.

from 30,000 to 40,000 is usually false. It represents in these cases not only the white blood cells but also the nucleated red blood cells. Herein lies the diagnosis of the more severe rapidly developing cases.

TREATMENT

Transfusions intravenously are imperative in these cases. The technic of giving these in scalp veins or through small canuli in the exposed vein is quite simple for the trained technician. Every hospital which takes the responsibility of the newborn baby today should see that some member of its staff obtain some training in this regard. It is a marked help in decreasing infant mortality. It is a procedure which should have the same respect of the profession as any operative procedure. It is definitely a life-saving measure. When cases of this disease have occurred in a family and other children are expected, the physician definitely is obligated to see that the mother has her baby in a hospital in which this type of treatment may be obtained, otherwise the childbirth is but an accident coincidental to labor. Liver extract crude and glucose are further indicated in these cases as is vitamin K. To these supportive measures has been added choline chloride which assists fat metabolism. It might suffice here to say that, from the pathologic findings of the liver, the present knowledge of the biochemistry of fat metabolism and clinical experience with its use, it is indicated.

Before closing, I wish to say that the incidence of the spastic child is related definitely to jaundice of the newborn infant, particularly with "erythroblastosis foetalis" and, to reduce the incidence of this pitiful condition as well as infant mortality, more attention must be given to icterus of the newborn infant.

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DIARRHEAL DISEASES IN THE NEWBORN INFANT

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Diarrheal diseases of infancy, prominent causes of morbidity and mortality,¹ assume added importance when they occur during the neonatal period. Attention is focused upon diarrhea in the newborn infant by frequent reports^{2,3,4,5} of outbreaks of unknown etiology, characterized by evident infectiousness and high mortality. In any consideration

of diarrhea in the newborn infant it is convenient to have some sort of classification of the diarrheal diseases. Such a classification, while necessarily inexact and open to discussion, serves a descriptive purpose and emphasizes etiology and altered physiology.

I. *Parenteral Diarrhea*.^{1,6}—Parenteral diarrhea results from disturbed gastric secretion with lowering of gastroduodenal acidity and inva-

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sion of the upper gastrointestinal tract by *B. coli* and other lower bowel saprophytes.

A. Causes:

1. Infections outside of gastrointestinal tract especially those of the nasopharynx, mastoid, middle ear.⁷
2. Fever per se, especially if inanition occurs.
3. High environmental temperature, especially conditions favoring inanition.

B. Characteristics of stool:

1. Voluminous, watery.
2. Contains mucus but no gross pus or blood.

C. Clinical features:

1. May be mild in well nourished infant but frequently severe in the newborn or debilitated infant.
2. Vomiting often prominent.
3. Fever frequently high (but febrile response of newborn infant may be deceptively poor).
4. Severely toxic—may mask initial parenteral infection.
5. Toxic exitus occurs rapidly unless corrective treatment is applied quickly and successfully.

II. *Enteric Diarrheas*.^{1,6}—Enteric diarrhea is caused by direct irritative, toxic or infectious effect on the gastrointestinal tract from various causative agents.

A. *Irritative*—physically or chemically unsuitable food.

1. Causes:

- a. Food causing indigestible residue.
- b. Excessive carbohydrate, fat.
- c. Overfeeding or starvation.
- d. Medicinals—laxatives and such excreted in breast milk.
- e. "Prandial diarrhea"⁸ of newborn infant—physiologic stimulation of intestine during feeding (not true diarrhea).

2. Stools—watery, foamy, soapy, lumpy.

3. Pathology and course—dependent upon extent of secondary infection and anhydremia.

B. *Toxic*—saprophytic contamination of food.

1. Causative organisms various:

- a. *Staphylococcus*, *paracolon*, etc.
- b. Toxins arising from bacterial bodies or from their metabolites.

2. Stools variable—usually no pus or blood.

3. Pathology and course variable—mostly dependent upon local effects and secondary infection and anhydremia.

C. *Specific*—bacillary dysentery,^{1,4} enteric infections by dysentery organisms and related groups.

1. Causative organisms (*dysenteriae*, *Shiga*, *Flexner*, *Sonne*, *His-Russel*, *Salmonella*).
2. Pathology—*iliocolitis*, involvement of Peyer's patches, ulceration of mucosa. Secondary anhydremia and toxemia.
3. Stools—numerous, large, watery, containing mucus, pus and blood. Specific organism can be cultured from stool. Specific agglutinins form but may appear late or not at all in newborn and premature infants.
4. Clinical course—abrupt onset, toxic course, high fever, anhydremia, acidosis, death from toxemia, or gradual recovery.

D. *Infectious diarrhea*.^{1,2,5,9,10,11,12,13,14}

1. Cause—miscellaneous organisms have been cultured but causative relationship is not proved easily. (Improving laboratory and diagnostic procedures will undoubtedly decrease this group. Probably merges with group E below.)
2. Pathology—surprisingly little pathologic condition in proportion to symptoms.
3. Stools—variable, no pus or blood.
4. Course—variable but usually sudden and severe.

E. "*Epidemic diarrhea of the newborn*"^{2,3,4,5}—Highly infectious and highly fatal. Occurs chiefly in newborn nurseries.

1. Cause—unidentified.

2. Pathology. (Quite different from bacillary dysentery.)

- a. Edema of brain.
- b. Multiple pin point hemorrhages throughout central nervous system.
- c. Intestinal mucosa denuded. No ulcerations.
- d. Peyer's patches uninvolved but mesenteric nodes enlarged.
- e. Pin point hemorrhages in mucosa.
- f. No consistent bacteriologic findings.

3. Course:

- a. Onset—insidious with anorexia, vomiting, distention, weight loss, little fever, loose watery voluminous stools, no pus or blood.
- b. Toxic phase—extreme diarrhea—large, loose watery stools, some mucus, no pus, no blood.

GENERAL CONSIDERATIONS

Infantile diarrheas, regardless of original etiology, produce most of their toxic effects through the same mechanisms of altered physiology.⁶ Diarrhea in the neonatal period is especially formidable because of immaturity of many protective functions in the newborn infant:

1. Susceptibility to infection, due to undeveloped immunity mechanisms as slow production of antibodies.¹⁵

2. Lability of control of body fluid and electrolyte balance.⁶

3. Immature development of renal function, hampering compensation of acid-base upsets.¹⁶

4. Unstable circulatory and respiratory systems¹⁷ leading to early collapse.

The onset of inanition may be rapid and a moribund state may be reached in a few hours. This may occur in severe cases even before expulsion of unabsorbed fluid from bowel begins. In general, the physiologic disturbances occurring in severe infantile diarrheas are as follow:¹⁸

1. Reduced fluid intake from failure of intestinal absorption.

2. Increased fluid loss from accumulation and expulsion from bowel of ingested fluid and secreted digestive juices.

3. Loss of fixed base due to loss of digestive juices usually reabsorbed in the intestine (see item 2).

4. Dehydration from decreased fluid absorption and increased fluid loss.

5. Anhydremia, decreased blood volume, following a decrease, first, of extracellular water, then, depletion of intracellular fluid.

6. Acidosis resulting from loss of fixed base in stool (see item 3). (Decrease in ratio of bicarbonate to carbonic acid below 20:1 or $\frac{\text{BHCO}_3}{\text{H}_2\text{CO}_3} < 20$)

7. Hyperpnea or forced deep breathing caused by acidosis (item 6)—a mechanism to compensate acidosis by blowing off carbonic acid through lungs tending to restore bicarbonate—carbonic acid ratio nearer 20:1.

8. Oliguria following anhydremia which results in retention of anions (i.e., chloride, phosphate and sulphate), increasing acidosis.

9. Liver damage from depleted glycogen store (lack of absorption—item 1).

10. Impaired liver detoxifying ability especially important in dysentery, caused by liver damage (item 9).

11. Ketosis caused by depleted liver glycogen (item 9).

12. Depleted blood protein resulting from failure of nitrogenous intake, and increased body protein destruction due to starvation. Hypoproteinemia masked by hemoconcentration during anhydremia but apparent and serious when normal fluid volume is restored.

13. Toxemia from failure of detoxifying mechanism in damaged liver (item 9).

TREATMENT

Recently the tendency has been¹⁷ to devise treatment schedules which cover most of the likely eventualities and to apply them to all cases of infantile diarrhea regardless of subsequently proved etiology. In all cases, one is dealing with some, or all, of these three cardinal phenomena: (a) hyperirritability of the gastrointestinal tract, (b) dehydration, anhydremia, acidosis, (c) infection, enteral and parenteral or parenteral.

(a) The irritable gut is best treated by resting the gastrointestinal tract followed by gradual re-

sumption of function through graded, bland, low residue feedings.

(b) The dehydration, anhydremia and acids require restoration of body fluid and blood volume and correction of chemical imbalances.

(c) The infectious agents involved have been found at least partially susceptible to the sulfonamide drugs.¹⁹

By combining these principles of treatment in every case of diarrhea in the newborn infant optimal therapeutic effort will be achieved in every patient.

Hartmann outlines a direct routine as follows:
17,18,20,21,22,23,24

1. Rest of gastrointestinal tract.

1st stage*

Severe case—nothing by mouth.

Moderate case—Ringer's solution only by mouth.

2nd stage*

Amigen 10 per cent ^{17,24}	} equal parts,† by mouth as tolerated.
Glucose 10 per cent	
Ringer's solution	

3rd stage*

Formula:

1 part evaporated milk	} gradually increasing feedings.
1 part water	
1 part lactic acid (1 per cent)	

Alternate with feedings of Amigen glucose Ringer's.

4th stage*

Formula—increase strength to:

2 parts evaporated milk	} every three hours.
2 parts water	
1 part lactic acid 1 per cent)	

Discontinue Amigen glucose Ringer's.‡

2. Fluid and electrolyte replacement.

For moderately severe dehydration and acidosis:

Intravenously = 30 cc. per kg. 1/6 molar sodium lactate, stat X 1.

Subcutaneously =	30 cc. per kg.	} stat X 1.
	1/6 molar sodium lactate	
	40 cc. per kg.	
	Ringer's solution	

(Synonyms—Hartmann's solution, lactate Ringer's, physiologic buffer salt solution.)

Supplement with lactate—Ringer's according to requirements.

Add 5 per cent glucose if starving continues.

For severe dehydration and acidosis:

Intravenously = 30 cc. per kg. 1/6 molar sodium lactate, stat X 1.

*Usually a twenty-four hour period—more or less according to clinical progress.

†These solution strengths are individually isotonic and un-irritating and remain so when mixed as shown.^{21,24}

‡Hartmann and Jaudon²⁵ point out the possibility of hypoglycemic reactions upon sudden withdrawal of extra parenteral carbohydrate and advise gradual reduction instead.

Subcutaneously = $\left\{ \begin{array}{l} 60 \text{ cc. per kg.} \\ 1/6 \text{ molar so-} \\ 40 \text{ cc. per kg.} \\ \text{Ringer's solu-} \\ \text{tion} \end{array} \right\} \text{stat X 1.}$

Subcutaneously—supplement with lactate—Ringer's "30-40" according to requirements and Ringer's with 5 per cent glucose if starvation has been pronounced.

Glucose 10 per cent, 20 cc. per kg. intravenously.

Transfusions as needed after fluid volume is restored.

Continue as needed until oral intake is adequate.

3. Chemotherapy.^{17,19}

Succinylsulfathiazole or sulfaguanidine—.25 gm. per kg. per day (in four to six doses) plus

Sulfadiazine—.2 gm. per kg. per day (in four to six doses alternating with succinylsulfathiazole).

Alternatives for sulfadiazine

- a. sulfathiazole
- b. sulfapyrazine

ADDITIONAL SPECIFIC CONSIDERATIONS

A. General supportive measures such as oxygen inhalations for respiratory inadequacy.

B. Parenteral infections require such direct procedures as may be indicated (myringotomy).

C. In parenteral diarrhea with toxemia, Minot and Dodd²⁶ call attention to a high level of guanidine in the blood and advise calcium gluconate ½ cc. of 10 per cent solution per kg. of body weight, given intravenously in 25 cc. of 5 per cent glucose followed by twice daily doses of 2 cc. of 10 per cent calcium gluconate intramuscularly.

D. Felsen and Wolarsky⁵ report favorable results from combined chemotherapy and normal human serum (or more conveniently, lyophilized pooled human serum).

E. In epidemic diarrhea of the newborn infant Lyon and Folsum⁴ observe the frequent coincidence of an epidemic of "influenza" in adults. They also point out the similarity of the pathology to that seen in epidemic influenza. They have reported favorable results by using immuno-transfusions from patients convalescing from influenza. This work has interesting etiologic as well as therapeutic implications.

F. Control of air borne infection in newborn and infant nurseries is desirable for prevention of parenteral and secondary infections. The use of ultraviolet lamps²⁷ for sterilizing room air has received wide attention and there have been a number of favorable reports on their use. Recently Robinson, et. al.,^{28,29,30} has called attention to the sterilizing effect of propylene glycol vapor on room air. Although still in the experimental stage, the use of

such procedures for minimizing cross infections may find important application in nurseries.

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STUDIES SUPPORT THE RULE TO OMIT DIABETIC PERSONS FROM DRAFT

Studies reveal that the present rule to omit diabetic persons from the Selective Service appears proper, Elliott P. Joslin, M.D., Boston, declares in the Medicine and the War section of *The Journal of the American Medical Association* for January 16.

He says that it is estimated that there are about 800,000 living persons with diabetes in the United States and that one might suppose that among them there would be many who could serve their country as members of the armed forces.

He says, "Both by arbitrary statistical estimates as well as by computations, based on an actual study and selection from a series of 8,500 persons diagnosed as having diabetes, that in the United States today the number of diabetic persons available for the Army or Navy lies between 4,500 and 1,800 men. With these figures in mind, the diabetic quota useful for military service is relatively insignificant.

CASE REPORTS OF THE BARNES HOSPITAL

CLINICAL AND POSTMORTEM RECORDS USED IN WEEKLY
CLINICOPATHOLOGIC CONFERENCES AT BARNES
HOSPITAL, ST. LOUIS

W. BARRY WOOD, JR., M.D., AND ROBERT
A. MOORE, M.D., Editors

CASE 11

PRESENTATION OF CASE

The patient was a 63 year old banker who was admitted to Barnes Hospital on December 3 and died on December 16, 1942.

Chief Complaint.—Pain in the chest.

Family History.—Two brothers are living and one is dead. Both brothers have had vascular hypertension. Other members of the family, whose relationship to the patient was not stated, also had high blood pressure. The one brother died from tuberculosis and the mother died from cancer.

Social History.—The history states that the patient's habits were moderate, but the use of tobacco and the extent of physical exertion and emotional stress were not mentioned.

Past History.—The patient apparently had escaped serious illness and considered himself always in excellent health.

Systemic History.—There was occasional transient dimness of vision. Hearing in the left ear had been impaired for several years.

Present Illness.—For several months the patient had been aware of fatigue and increasing shortness of breath on exertion. Two weeks previous to admission he suffered a sudden attack of dizziness which passed off in a few minutes. Twenty-four hours before admission to the hospital, while backing his car into the garage, he felt sudden, severe, stabbing pain over his heart. The pain radiated down the left arm into the hand where it was accompanied by numbness and tingling, and it also penetrated through to the back. No relief was secured from oral medication, but the severe pain gradually subsided and the following day there was a sense of oppression over the front of the chest.

Physical Examination.—Temperature was 37.7 C.; pulse 80; respiration 18; blood pressure 178/112. The patient when first observed in the hospital was sleeping quietly. He was well nourished. The eyes revealed beginning cataract and an ophthalmoscopic examination was not made. The left ear drum was retracted and pale. Hearing was diminished in each ear. An upper denture was worn and the lower teeth were in poor repair. There was a marked tremor of the tongue. The lungs were clear. The heart was not enlarged to percussion. The sounds were distant but of good quality and the rhythm was irregular with apparent frequent extrasystoles. The rate was 80 with no pulse deficit; no murmurs were heard. The abdomen was normal. No mention was made of edema or the state of the peripheral arteries.

Laboratory Findings.—Blood count showed red blood cells 5,040,000, hemoglobin 16.4 grams, white blood cells 12,300, differential count was segmented forms 84 per cent, lymphocytes 13 per cent, monocytes 3 per cent. Urinalysis showed specific gravity 1.020, albumin trace, sugar none, microscopically numerous white blood cells and few red blood cells. Kahn test gave negative reaction. Electrocardiogram on admission showed frequent premature contractions and left axis deviation. No further laboratory reports were recorded other than electrocardiograms.

Course in Hospital.—On admission the patient was given morphine which induced sleep.

December 4. Temperature was 38 C. Auricular fibrillation was noted with a rate of 140.

December 5. The heart rhythm was regular. Blood pressure was 185/130. The patient complained of severe pain in the chest and was given morphine.

December 6. The heart was regular with a rate of 134. Right carotid pressure slowed this to 70 with a few extrasystoles.

December 7. Electrocardiograms showed auricular flutter with a 2 to 1 block.

December 8. On returning to bed from the bathroom the patient experienced severe precordial pain. He was found to be pale and sweating and his extremities were cold. The radial pulse could not be felt and the heart sounds were distant and rapid. Blood pressure was 75/—.

December 9. Temperature was 37 C. The heart was totally irregular with an apical rate of 135. Cheyne-Stokes breathing developed but no other signs of congestive failure were noted. Digitalis therapy, however, was begun. Electrocardiogram showed auricular fibrillation and the T wave in lead IVF was inverted.

December 10 to 15. The pulse rate varied from 80 to 115 and the rhythm was at times regular and at other time very irregular. Cheyne-Stokes respiration persisted. There were several attacks of precordial pain and considerable restlessness developed for which morphine was given.

December 16. A blowing systolic murmur was heard over the entire precordium. Electrocardiogram revealed myocardial damage of the coronary type and auricular premature contractions. The patient slept most of that evening. He awakened and asked for water. The nurse reported that he showed nothing unusual and had told her he "felt O. K." Shortly afterward he was found pulseless, gasping for breath and he then expired.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: Dr. Massie, we shall have to rely upon you a great deal to guide us in this case. In reading the history I am sure it occurred to everyone that this might be a case of coronary occlusion. Would you be willing tentatively to accept this diagnosis for purpose of discussion?

DR. EDWARD MASSIE: Yes, I would accept that diagnosis tentatively.

DR. ALEXANDER: The patient was 63. What besides age and sex in any case of coronary occlusion may be predisposing factors?

DR. MASSIE: Elevated blood pressure is an important factor.

DR. ALEXANDER: The man had hypertension; his diastolic pressure was 112. The elevation in blood pressure suggests that there was vascular disease. Which is the important factor, the high blood pressure or the changes in the blood vessels?

DR. MASSIE: The elevated blood pressure itself is a highly important factor but for clinical discussion one cannot specifically demarcate the arterial changes from the hypertension. Undoubtedly, along with this patient's increased blood pressure he has an advanced degree of arteriosclerosis.

DR. ALEXANDER: Unfortunately, we have no report of an ophthalmologic examination and he was too ill to have a radiologic examination of the aorta. His family history is relevant in that his brothers as well as other members of the family had arteriosclerosis. What else, Dr. Massie, will predispose to coronary occlusion?

DR. MASSIE: Obesity. I do not know whether or not this patient was obese.

DR. REINHARD: The patient was overweight; further than that we do not know.

DR. MASSIE: Certain professions seem to have a predisposition to disease of the coronary arteries. The fact that this patient was a banker with attendant stress and strain may be significant. In addition, diabetes is associated with an increased incidence of disease of the coronary vessels.

DR. ALEXANDER: Is that correct statistically?

DR. MASSIE: Yes. Certainly from the clinical point of view, the association of diabetes with angina pectoris and coronary thrombosis is high. For example, when women under 40 years of age have a coronary thrombosis one looks for either hypertension or diabetes as the fundamental precipitating cause of the disorder.

DR. ALEXANDER: What is the relation between diabetes and arteriosclerosis?

DR. CYRIL MACBRYDE: They are related. The incidence of disease of the coronary arteries is higher in diabetes than occurs generally. In diabetic patients arteriosclerosis may be particularly severe.

DR. ALEXANDER: Do pathologists agree with this point of view?

DR. MACBRYDE: There is difference of opinion. It is known that arteriosclerosis in children is extremely rare except among children with diabetes. Arteriosclerosis will result from diabetes in childhood. Women with diabetes have coronary disease almost as frequently as men do.

DR. ALEXANDER: What about tobacco? Dr. Massie, are you a member of the group that believes that tobacco is of importance in the development of arterial disease? Do you prohibit your patients from using tobacco?

DR. MASSIE: I do to the extent of advising pa-

tients either to cease or greatly reduce their smoking.

DR. ALEXANDER: There is a debate about this. This man's first symptoms developed about two months before admission to the hospital. He had shortness of breath, especially upon exertion and fatigue. This is in keeping with narrowing of the coronary artery. There is also a history two weeks before his final illness of severe vertigo. Is this a symptom of coronary thrombosis?

DR. MASSIE: It is not frequent but one sees it often enough. Probably this represented an episode of syncope.

DR. ALEXANDER: Dr. Walsh, do you believe that the vertigo was due to labyrinthitis inasmuch as there was impaired hearing?

DR. THEODORE WALSH: No, I do not.

DR. ALEXANDER: Is it not true that people with impaired hearing and arteriosclerosis have vertigo?

DR. WALSH: Vertigo may occur in association with arterial vascular disease but the vertigo is not due to labyrinthitis.

DR. ALEXANDER: Consideration should be given to the fact that this man was backing his car into the garage when he suffered his first attack of severe pain. Dr. Massie, would you be good enough to review the electrocardiograms for us and tell us what may be concluded from them?

DR. MASSIE: This patient had five electrocardiograms taken over a period of thirteen days. As one reviews the successive records, the only striking changes are the occurrences of the arrhythmias. The first record shows only frequent auricular extrasystoles and otherwise reveals no definite variation from what one may consider an average record for a man of this age. The second electrocardiogram taken several days later reveals no additional change. The third record which was taken three days after the previous one illustrates a perfect example of auricular flutter with a 2 to 1 block. The fourth record taken on the ninth day of hospitalization shows the presence of auricular fibrillation and the T waves are lower in the various leads with slight inversion in the fourth lead. It is, however, important to remember that digitalis was given in the interim and this medication could account for the change in the T waves. There is no elevation, depression or rounding of the ST segments which might suggest the presence of a myocardial infarction. The last record, taken on the day of the patient's death, aside from the reversion to a normal sinus rhythm, again shows no significant additional changes over the previous one. Thus, in summarizing the evidence which can be obtained from these records, one can say only that this patient had myocardial damage of the type often seen in coronary disease but that the electrocardiographic signs are insufficient for making a diagnosis of coronary thrombosis. Then when one considers that these successive electrocardiograms included fourth leads and were taken at appropriate times over a period of thirteen days with the last one on the day of death, the lack of evidence of a myocardial in-

fraction attains heightened significance and indicates to me that we should strongly consider other diagnoses.

DR. ALEXANDER: Would the loud systolic murmur be at all in keeping with coronary thrombosis?

DR. MASSIE: Dilatation of the heart in coronary thrombosis with associated widening of one of the valvular rings could easily produce such a murmur.

DR. LLEWELLYN SALE: If he had a small rupture of a ventricle, would the expulsion of blood suddenly give such a murmur?

DR. MASSIE: Yes, it is quite conceivable that rupture of an infarcted area in the ventricular wall occurred with the production of the murmur and sudden death. But in that case one must assume that he had a myocardial infarction and specific electrocardiographic evidence for this is lacking.

DR. SALE: I was wondering about the rupture of an infarcted area or the rupture of a dissecting aneurysm. In reading over the case I was especially impressed by the fact that the man's blood pressure remained elevated after the attack. In coronary thrombosis it may be expected to fall.

DR. ALEXANDER: The elevated blood pressure is in keeping with dissecting aneurysm. What about onset of sudden pain with exertion?

DR. SALE: That is typical except that the pain usually is retrosternal.

DR. ALEXANDER: The pain this man had radiated to the back and down the left arm. In dissecting aneurysm, what is the radiation of the pain?

DR. SALE: The pain usually does not radiate down the left arm, although it may occasionally.

DR. ALEXANDER: Then you favor the possibility of a dissecting aneurysm? Dr. Wood, have you any suggestions?

DR. WILLIAM BARRY WOOD, JR.: I would agree with Dr. Sale. The history is very suggestive of dissecting aneurysm. One important point in the history is that in the beginning the pain went through to the back. This is common with dissecting aneurysm. Dr. Massie, how often does coronary pain radiate through to the back?

DR. MASSIE: Less frequently than its radiation to the other areas.

DR. WOOD: Another important point in favor of dissecting aneurysm, as mentioned by Dr. Sale, is the fact that the blood pressure remained elevated. Hypertension with coronary occlusion was described by Dr. Soma Weiss who collected several cases in which the blood pressure was elevated and remained elevated following coronary thrombosis. This, however, is a rare finding.

DR. ALEXANDER: Is it unusual to have coronary occlusion of this severity without specific changes in the electrocardiogram?

DR. MASSIE: Yes, particularly if one is able to take frequent and successive records with fourth leads over a period of two weeks after the acute episode as was done in this case.

DR. SALE: It should be mentioned that in dissect-

ing aneurysm, when a murmur is present, it is usually diastolic and not systolic.

DR. ALEXANDER: Are there other suggestions?

DR. ALFRED GOLDMAN: What about the fever and leukocytosis?

DR. ALEXANDER: The patient did not have any fever on admission but the next day his temperature was 38 C. and his blood count was 12,000.

DR. SALE: In dissecting aneurysm fever and leukocytosis are not common. However, they might be associated with clot formation.

DR. WOOD: Dr. Sale, how does dissecting aneurysm involve the coronary arteries?

DR. SALE: By occluding through pressure the mouth of one of the coronary arteries. It is a mechanical interference with the access of blood to the coronary vessels.

DR. WOOD: Can you explain the pain down the arm in any other way than by assuming that the pressure involved one of the coronary arteries?

DR. SALE: I think not.

DR. MASSIE: I do not believe that we have to assume involvement of one of the coronary arteries by the dissecting aneurysm. The arrhythmias present could be caused by a dissecting aneurysm as could the other electrocardiographic changes. Radiation of pain down the left arm has been described in case reports of dissecting aneurysm although it is not frequent.

DR. ALEXANDER: The pain down the arm may be explained by irritation of the cardiac plexus situated on the aortic arch. All pain fibers coming from the heart pass through this, including those from the coronary sheaths.

DR. SALE: May hemopericardium develop slowly or is it always a very rapid process?

DR. MASSIE: When it occurs from rupture of the aortic or ventricular wall it develops rapidly in contrast to the slower development of hemorrhagic pericarditis as a result of infection or a malignant tumor of the heart wall.

DR. ALEXANDER: If there were coronary occlusion, then this sudden death might be characteristic of a second occlusion. What about rupture of the heart? How common is that in coronary occlusion?

DR. MASSIE: It is quite uncommon, especially when one considers the large number of patients who have a coronary thrombosis clinically and recover without undue complications.

DR. ALEXANDER: Do these individuals get pulmonary infarctions?

DR. MASSIE: Yes, if a mural thrombus develops in the right ventricle adjacent to the area of infarction and a portion of the thrombus becomes dislodged, it may produce embolic lesions in the pulmonary vessels and a pulmonary infarction as a consequence.

DR. ALEXANDER: Death occurred on the thirteenth day. Does pulmonary embolism often occur at this stage?

DR. MASSIE: Yes, this process may occur any time after the first few days. Another possible cause

of sudden death in these patients is the occurrence of ventricular fibrillation.

DR. ALEXANDER: I do not know whether all the evidence has been presented but from that which we have it would seem that there is more to support the diagnosis of dissecting aneurysm than coronary occlusion.

CLINICAL DIAGNOSIS

Occlusion of a coronary artery.

Infarct of the myocardium.

DR. ALEXANDER'S DIAGNOSIS

Dissecting aneurysm of aorta.

ANATOMIC DIAGNOSIS

Chromotropic degeneration of aortic media.

Rupture of aorta in ascending part of arch.

Dissecting aneurysm of aorta.

Rupture of aneurysm into left pleural cavity.

Hemothorax, left.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: In the wall of the aorta there was characteristic chromotropic degeneration (the lesion found in almost every example of rupture of the aorta) and the formation of a dissecting aneurysm. The rupture was, as is typical, transverse and within the first 5 to 8 centimeters of the ascending thoracic aorta. Dissection in this patient proceeded throughout the entire length from that point distalward, but there was no dissection proximally toward the heart. Histologic examination at several points along the pathway of the dissecting aneurysm revealed a varying picture. At the point of rupture there were phagocytes containing blood pigment and proliferation of fibroblasts, indicative of a duration of from one to three days. At other points in the descending aorta and in the abdominal aorta the red blood cells were well preserved. We must conclude from this evidence that an initial rupture of the aorta occurred several days before death and that, shortly before death, the dissection of the aortic wall was completed and the outer lining of the aneurysm ruptured into the left pleural cavity.

The orifices of the coronary arteries were of the usual size but throughout the major branches, particularly in the left descending coronary artery, there were numerous large plaques, producing advanced stenosis. It is not possible, from the anatomic findings, to state categorically what part the coronary arteriosclerosis and what part the dissecting aneurysm played in the causation of the signs and symptoms. It seems probable that the initial attack several weeks before death was based on the coronary arteriosclerosis and that the attack a few days before death was based on a rupture of the aorta.

CASE 12

PRESENTATION OF CASE

The patient was a 50 year old, white, widowed female who entered the Barnes Hospital on September 15 and died on December 26, 1942.

Chief Complaints.—Fatigue, abdominal distention, intermittent chills and fever, pain in both legs.

Family History.—The patient's mother died at the age of 52 of heart trouble, her father died at the age of 80 of a stroke, one brother and one sister each died at about the age of 50 of heart trouble.

Social History.—The patient was born in Missouri and lived abroad for twelve years. She was a musician and traveled through many European countries on concert tours. Her hours of work were long. Food habits were irregular and she indulged in alcohol somewhat immoderately.

Past History.—The patient had most of the usual childhood diseases including measles and whooping cough only eight years and three years, respectively, previous to admission. She had mild joint pains as a child but these were never acute. For many years she was subject to upper respiratory infections. Operations included tonsillectomy at the age of 12 and again at 32; appendectomy at 15 and cholecystectomy at 35.

Systemic History.—For many years the patient had abdominal cramps and diarrhea which was diagnosed "intestinal allergy" from ten to twelve years before admission. This condition was studied extensively and she was placed on a rigid diet. When she adhered to the diet, her symptoms were relieved but she complained that the diet made her greatly fatigued. This diet excluded many vegetables, virtually all fruits, and most meats.

Present Illness.—Shortly after her attack of whooping cough during which she spent four months in bed, it was discovered that her white blood count was 300,000 and her spleen considerably enlarged. At that time there were no enlarged lymph nodes and no hemorrhagic manifestations. The diagnosis of leukemia was made and deep roentgen ray therapy was given over the splenic area. The size of the spleen decreased promptly and her white blood cells fell to a level slightly above normal. The patient received periodic roentgen ray treatments thereafter whenever the spleen became enlarged or the white cells increased appreciably; the last treatment was about eight months before admission. During the last eighteen months of her life the patient took Fowler's solution, 10 drops twice a day with regularity except for the last two weeks when it was discontinued because of nausea and vomiting.

During the last twelve months the patient had temperature elevations almost daily, sometimes preceded by chills. The fever was associated with general malaise and weakness necessitating bed rest for weeks at a time. Six months previous to admission she had a sudden chill and a temperature elevation to 105 F. During this episode she developed a painful herpetic rash on both legs, more on the right than on the left. The rash was associated with intense pain for which she was given generous doses of dilaudid; she received these doses with increasing frequency. The eruption recurred for over 4 months and the pain persisted during

that time and thereafter. Two months prior to admission, the patient developed ankle edema, and a few weeks later the abdomen became visibly swollen. She had complained for some time of a feeling of fullness after meals.

Physical Examination.—Temperature was 37 C.; pulse 112; respiration 20; blood pressure 100 64.

The general appearance of the patient was not stated. The eyegrounds were not visualized because of incipient cataracts. The mouth showed dental caries with pyorrhea. There were typical lesions of riboflavin deficiency at the corners of the lips. The mucous membranes of the mouth were pale. The tonsils were absent; there was no cervical lymphadenopathy. There were dullness, diminished breath sounds and moist rales at the bases of the lungs posteriorly and in both axillae. The heart was greatly enlarged and the area of cardiac dullness extended past the left anterior axillary line. The point of maximum impulse was felt in the 6th interspace in the mid-axillary line. The rhythm was regular, the rate 96, and the sounds of poor quality. There were no murmurs, but the pulmonary second sound was accentuated. The abdomen was distended; the spleen was greatly enlarged extending downward to just above the pelvic brim and was tender. The liver was but questionably palpable; no other masses were detected. Pelvic and rectal examinations were deferred. Extremities showed massive pitting edema of both legs extending upward to the sacral area. There was also slight edema of the chest wall, forearms, and hands. Scattered brown pigmented areas at the site of the old herpetic lesions on both legs were visible. The tendon reflexes were normal except for absent ankle jerks and knee jerks. Muscles of lower extremities were flabby. Calf muscles were sensitive to pressure and the soles of the feet were exquisitely tender.

Laboratory Findings.—The admission blood count was as follows: red blood cells 2,350,000, hemoglobin 6.5 grams, white blood cells 134,000,

differential count was basophils 0, eosinophils 3 per cent, myelocytes C 24 per cent, B 8 per cent, A 2 per cent, myeloblasts 1 per cent, metamyelocytes 9 per cent, band forms 9 per cent, segmented neutrophils 42 per cent, lymphocytes 2 per cent, monocytes 0, platelets 830,000. Urinalysis showed specific gravity 1.009, albumin trace, sugar none; microscopically many white blood cells and numerous bacteria. Blood chemistry showed nonprotein nitrogen 29 mg. per cent, serum calcium 7.4 mg per cent, serum phosphorus 4.5 mg. per cent, uric acid 5.8 mg. per cent, total proteins 4.5 grams per cent, albumin 2.7, globulin 1.8. Basal metabolic rate was plus 18 and plus 25 per cent. Electrocardiogram showed myocardial damage, low voltage, transverse position of the heart.

Course in Hospital.—During the patient's fifteen week residence in the hospital she had a low grade fever. Throughout this time abdominal pain was more or less persistent. For the pain she was given dilauidid several times daily continuously. The edema visibly decreased and the patient lost 14 pounds during the first month. Her blood was counted almost daily under the supervision of the Hematology Laboratory and she was given twenty-three injections of radioactive phosphorus, totalling 9.7 millicuries. Although she received thirteen transfusions of whole blood and blood plasma, the red blood cells reached 3,000,000 on only two occasions and dropped as low as 1,800,000. The white blood cells on the other hand, under treatment with radioactive phosphorus, eventually dropped to 3,800 and a shift to the right became so pronounced that on December 9 there were but 6 C myelocytes, 2 metamyelocytes, 6 band cells, 80 segmented neutrophils and 6 lymphocytes. However, the last recorded count on the day before death showed a reversal again to a total of 84 myelocytes in the peripheral blood. During the last two weeks of her life the patient developed hematuria followed by bleeding from the nasal mucous membranes. This was accompanied by a fall in the platelet count to 15,000.

Table 1. Blood Picture

Date	Red Blood Cells	Hb.	White Blood Cells	Basophils	Eosinophils	Myelocytes	Metamyelocytes	Stab Forms	Segment Forms	Lymphocytes	Monocytes	Platelets	Transfusion
9/15/42	2.35	6.5	134,000	0	3	34	9	9	42	2	0	830,000	
9/22/42	2.31	7.9	172,000	0	0	43	5	5	45	2	0	1,320,000	
10/1/42	2.35	6.2	79,000	1	0	14	8	6	66	1	4	770,000	
10/10/42	3.06	7.8	28,000	2	0	10	4	6	62	2	14	2,260,000	10 7 42
10/20/42	2.17	6.1	16,000	0	0	5	3	10	70	3	9	2,389,000	10 31/42
10/29/42	1.65	4.4	9,350	1	0	1	1	5	90	0	2	934,000	11 3 42
11/6/42	2.63	8.4	7,600	0	0	0	0	1	92	1	6	350,000	11 5 42
11/19/42	2.52	6.9	6,000	0	1	0	2	4	78	5	10	186,000	11 12 42
11/30/42	2.52	6.4	5,900	1	0	1	1	2	92	3	0	80,600	
12/12/42	2.11	6.4	3,800	0	0	2	0	2	80	10	6	15,000	
12/23/42	2.66	7.0	17,500	0	0	C3 B1 A80	2	0	10	4	0	15,900	

Radioactive phosphorus administered from 9/17/42 through 10/20/42 with a total dose of 9.7 millicuries.

It was thought that the thrombocytopenia might be due to the radioactive phosphorus so treatment was discontinued. From this time on the patient failed visibly, became extremely weak and apathetic and finally expired.

Treatment, besides radioactive phosphorus and transfusions, was symptomatic and included vitamin B complex as well as some of its components given separately. While in the hospital the patient's heart gradually decreased in size, finally reaching normal.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: This case was exceedingly interesting. The patient obviously had a typical myelogenous leukemia with some associated conditions. I think it would be well to begin with these. She had a massive edema of the legs, ascites, also edema of the arms, chest and hands. Are there any suggestions as to the cause of this?

DR. CARL HARFORD: She might have had congestive heart failure.

DR. ALEXANDER: Yes, she had a large heart upon admission. However, the patient could lie flat and with such generalized edema it must have been a very severe failure. Are there other suggestions?

DR. WILLIAM BARRY WOOD, JR.: Her plasma proteins were very low.

DR. ALEXANDER: They were 4.5 grams per cent and her albumin was 2.8. The colloidal osmotic pressure was 17.5, thus below the threshold for edema. That might account for the generalized edema in addition to possible heart trouble. Why did she have low plasma proteins with a normal albumin-globulin ratio?

DR. HARFORD: There are two possible causes. She probably had a leukemic infiltration of the liver and she also had albuminuria.

DR. ALEXANDER: In cases of liver damage does one not expect an inverted ratio? Dr. Moore, may one have a normal ratio with liver damage?

DR. CARL MOORE: It would be relatively rare. In severe forms of liver damage I would expect albumin to be more depressed than globulin.

DR. ALEXANDER: Is there any other reason why the serum proteins should be low?

DR. CARL MOORE: It could have been due to a low intake of proteins.

DR. ALEXANDER: That is very possible. She was on a diet for ten years. Was her diet low in proteins?

DR. EDWARD REINHARD: Proteins were very definitely reduced. Over that period she ate no meat except fish and the white meat of fowl which she did not care for and seldom ate.

DR. ALEXANDER: This woman had gastrointestinal allergy. I do not know whether or not that interferes with absorption. She may have had a functional lesion of the colon plus low protein intake. In starvation edema one will get a normal serum albumin-globulin ratio and thus one might assume that edema was due at least in part to low protein intake. Was there evidence of further food

deficiency other than lack of riboflavin as indicated by her cheilosis?

DR. DAVID RIOCH: The neuritis would suggest thiamin chloride deficiency.

DR. ALEXANDER: Could the neuritis have been caused by the herpes zoster?

DR. RIOCH: The sensory disturbance was typical of neuritis. I think the pain was entirely a neuritic pain. What was the distribution of the herpes?

DR. REINHARD: It was on both legs.

DR. RIOCH: That distribution is rare in herpes.

DR. ALEXANDER: Are not the vesicles that the patient had in keeping with herpes?

DR. RIOCH: There is no history of erythema. There were neuritic symptoms and tenderness on deep pressure which is typical of neuritic pain.

DR. ALEXANDER: The patient had a very large heart. Dr. Massie, would you care to comment upon this?

DR. EDWARD MASSIE: There are three possible etiologic factors in this patient's heart disease. She had either degenerative heart disease with coronary arteriosclerosis, beriberi heart disease due to thiamin chloride deficiency or the type of cardiac involvement seen in myxedema or severe hypothyroidism. In favor of the second condition was the fact that her markedly enlarged heart became definitely smaller with therapy. Such response to thiamine treatment does not occur in degenerative heart disease. The electrocardiogram is compatible with either beriberi heart disease or myxedema when one considers the slow rate, the inverted T waves in all four leads and the low voltage. This type of record, however, is seen also in advanced coronary sclerosis. The fact that the patient's basal metabolic rate was plus 25 per cent is of course against myxedema as an etiologic factor. In summary, it appears to me that, if one considers the cardiac features together with the general condition of the patient, there is more evidence of thiamin chloride deficiency than degenerative heart disease as the cause for this patient's cardiac difficulties.

DR. ALEXANDER: The basal metabolic rate of plus 25 is in keeping with leukemia. Dr. Soma Weiss pointed out that beriberi heart is found clinically with other types of thiamin chloride deficiency. Is it not true, however, that beriberi heart disease is extremely rare in this locality?

DR. MASSIE: That is true. I have seen only one good case.

DR. ALEXANDER: Dr. Williams, you have had a large experience with vitamin deficiencies, especially with thiamine deficiency. Have you seen any similar cases?

DR. RAY WILLIAMS: Regarding beriberi heart disease I agree that the condition is extremely rare. I have seen several cases presumptively diagnosed beriberi heart disease which have turned out to be heart disorders from other causes. There are mild degrees of thiamine deficiency which produce tachycardia on even slight exertion and mild changes in the electrocardiogram. True beriberi heart disease results from long continued relatively

low intake of thiamine such as one might find in Orientals. This patient apparently did have a polyneuritis. Absence of tendon reflexes is a manifestation of thiamine deficiency. I have studied some cases of polyneuritis very carefully of late and I know that thiamine deficiency can be and is a cause of polyneuritis. It takes weeks and months of therapy to cause the signs to disappear. On the other hand, many of the sensory and motor defects may return to normal within a reasonable length of time. I would think that this patient had a polyneuropathy, most likely from thiamine deficiency.

DR. MASSIE: Would you expect a reversal of serum proteins?

DR. WILLIAMS: I would not. In studies of thiamine deficiencies it has been my experience that serum proteins fall but not to a very great degree and the fall is apparently due to liver damage.

DR. ALEXANDER: Will liver damage be detected when the liver is exposed?

DR. WILLIAMS: Not necessarily.

DR. ALEXANDER: There is one other thing of interest. The patient had a urinary infection. Dr. Wood, do you feel that she had reduced her capacity to make antibodies because her serum proteins were low?

DR. WOOD: I think that is quite possible. The work to which you refer is still in the experimental stage, but Dr. Cannon recently has shown that animals on protein deficient diets do not develop antibodies as well as animals on normal diets.

DR. ALEXANDER: Dr. Moore, will you discuss her leukemia?

DR. CARL MOORE: There really is not much to be said. She had typical chronic myelogenous leukemia for three years. It was thought by her physician that she was so near the point of being refractory to roentgen ray therapy that he saw no point in administering it. We did administer radioactive phosphorus, however, and obtained a fairly satisfactory response. The most interesting feature of this case was the thrombocytopenia which occurred during therapy. Dr. Hempelmann has observed this phenomenon on several occasions during treatment with radioactive phosphorus.

DR. ALEXANDER: Dr. Moore, when we see these organs shall we expect changes in the bone marrow, spleen and liver?

DR. CARL MOORE: Yes. We might also find some in the genito-urinary tract.

DR. ALEXANDER: Dr. Rioch, will we find lesions in sensory nerves?

DR. RIOCH: I doubt it.

DR. ALEXANDER: She received a large amount of Fowler's solution. Do you think she might have had neuritis from that?

DR. RIOCH: No, I do not.

DR. ALEXANDER: Will the heart muscle be normal?

DR. WILLIAMS: The cardiac lesion of thiamine deficiency usually is characterized by regions of muscle degeneration.

DR. MASSIE: We may find a hypertrophied heart and possibly leukemic infiltration of the musculature.

CLINICAL DIAGNOSIS

Myeloid leukemia.

Thiamine and riboflavin deficiency. Protein deficiency. Beriberi heart.

DR. ALEXANDER'S DIAGNOSIS

Myeloid leukemia.

Beriberi heart disease.

Polyneuritis due to thiamine deficiency.

Riboflavin deficiency.

Pyelonephritis.

ANATOMIC DIAGNOSIS

Myeloid leukemia.

Acute pyelonephritis.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: The pathologic changes of myeloid leukemia in this patient were typical. The spleen weighed 1,050 grams, the liver 2,100 grams and the kidneys 200 and 230 grams respectively. Throughout all of these organs, and in the lymph nodes and bone marrow, there were large numbers of immature myeloid cells. There were petechiae and ecchymoses in the skin, in the mucosa of the small intestine, in the pericardium and in the endocardium. The heart was otherwise normal.

There was extreme emaciation, with serous atrophy of fat, but we were not able to demonstrate any evidences of specific vitamin deficiencies. The absence of specific lesions of vitamin deficiency is not surprising in view of the fact that the patient received intensive vitamin therapy while in the hospital. The peripheral nerves were not examined.

There was an acute infection consisting of an acute pyelonephritis involving both kidneys, an acute ureteritis and cystitis and an abscess in the subcutaneous tissues of the left arm.

The defense against infection in a patient with myeloid leukemia is impaired. It has been shown that the immature cells of the myeloid series, either normal or leukemic, have little phagocytic activity. In addition, the bone marrow is for the most part replaced with leukemic tissue and there is no opportunity for the rapid maturation of leukocytes to combat infection. Hence, the histologic picture of an infection in a patient with leukemia is that of edema, congestion and exudation of fluid and fibrin, without migration of leukocytes.

In a time of national emergency such as the present when the resources of the hospital staff are strained to the utmost, cooperation and courtesy on the part of the patient will do much to relieve pressure and save the time of the attendants. In *Hygeia, The Health Magazine* for February, Arthur P. Trewhella, M.D., Jersey City, N. J., points out several ways in which, by adherence to routines that have been established for the comfort of all, the patient may do his part to help keep the hospital functioning at maximum efficiency.

ABSTRACTS AND DIGESTS

PERIARTERITIS NODOSA

The Role of Hypersensitivity in Periarteritis Nodosa. Arnold R. Rich. Bull. Johns Hopkins Hosp. 71:123 (September) 1942; Ibid. 71:375 (December) 1942.

Vascular lesions characteristic of periarteritis nodosa are reported in the tissues of eight patients manifesting hypersensitive reactions. In one case, the inciting antigen of the reaction was foreign serum. In two cases the reaction was caused by sulfonamide therapy. In the remaining five cases, both foreign serum and sulfonamides had been administered and it was not clear which had been the more important factor. The second paper includes a brief preliminary report of the production of typical lesions of periarteritis nodosa in experimental animals by the intravenous injection of a single large amount of foreign protein.

Periarteritis nodosa, in the light of this important new evidence, is to be regarded, not as a specific infectious disease, but rather as a manifestation of the anaphylactic type of hypersensitivity to various antigens. Cases of periarteritis occurring in the future should be studied with this concept in mind.

HENRY PINKERTON, M.D.

NAIL POLISH ECZEMA

Nail Polish Eczema. Frank A. Simon. South M. J. 36:157-159 (February) 1943.

This report deals with the study of thirteen cases of nail polish eczema. All were women with patches of dermatitis, beginning as an itching redness and swelling, and terminating with desquamation, most frequently located on the eyelids and, in lesser frequency but often as an associated lesion, on the neck, chin, infraclavicular regions, cheeks, ear canals and axillae. The location of the lesion could always be traced to contact with the nail polish. One patient had an eczematous patch on the leg from the application of the lacquer to a run in her stocking. The dermatitis did not occur where the cornified layers of epidermis prevented the penetration of the allergen to sensitizable tissue.

Patch tests with five different brands of several different shades and with colorless lacquer were positive in all cases. It was inferred that the causative allergen, therefore, was some common constituent used by many manufacturers and not a dye. Accordingly, seven of these patients and two persons without dermatitis were tested by the patch method with twenty-five substances used in the manufacture of nail polish. Formaldehyde-sulphonamide resin was the only substance which gave a positive reaction in the patients and a negative test in the control subjects.

The author suggests that a nail lacquer omitting this resin would be nonallergic. Nail lacquers are highly complex mixtures containing a large number of potential eczematizing substances. Many of these

substances are used in industry in the manufacture of automobiles, airplanes, steel and wood products, and are the ingredients of lacquers that coat imitation leather, glass beads, metal jewelry, hairpins, pencils, furniture, celluloid playing cards and straw hats, to mention only a few common objects.

The practical application of this study, therefore, concerns not only nail polish as the causative agent of an easily identified eczematous syndrome, but also that of many other causes of dermatitis of obscure causation.

C. H. EYERMANN, M.D.

THROMBOPHLEBITIS

The Treatment of Acute Superficial Thrombophlebitis in an Incompetent Venous System of the Lower Extremities. W. W. Heyerdale; O. T. Clagett, and E. M. Anderson. Proc. Staff Meet., Mayo Clin. 18:1-4 (January 13) 1943.

The term "acute superficial thrombophlebitis" is used to designate a recent thrombophlebitis which involves the superficial veins of the lower extremity. The symptoms are of short duration and consist of localized tenderness, induration, redness and inflammation along the course of one of the varicosities of the lower extremity. As a rule, there is a mild febrile reaction. In the past most of these patients have been advised to go to bed, elevate the leg and use warm moist compresses; and they have had a prolonged period of disability.

In their reports, these authors emphasize that these patients do not require prolonged bed rest with the resulting disability but can have the veins obliterated satisfactorily by a prompt course of injection treatment and be restored to their normal occupation in a relatively short time.

If the great saphenous vein is found to be incompetent, a high ligation is made at the sapheno-femoral junction with a retrograde injection of a sclerosing solution, otherwise, the injection is made proximal to the reddened area. This procedure is carried out as soon as possible after the diagnosis is made. A 5 per cent solution of sodium morrhuate is used as the sclerosing agent and from 0.5 cc. to 3 cc. is injected depending upon the location of the thrombophlebitis. Small doses are recommended when a thrombophlebitis is present as the vein already is thrombosed partially. The leg is elevated and moist packs are applied postoperatively. The redness and tenderness begin to subside almost immediately and the patients have improved sufficiently to be ambulatory after twenty-four hours. The remaining varicosities are injected with sodium morrhuate daily from the fifth to the eighth day and most patients are discharged as cured prior to the eleventh postoperative day.

The advantages of this treatment are: (1) the acute stage of the disease is shortened, (2) all varicosities are obliterated at the same time, (3) there is less likelihood of a recurrence of the phlebitis and (4) the chance of pulmonary emboli is minimized.

E. VERNON MASTIN, M.D.

SULFONAMIDES IN OTOLARYNGOLOGY

The sulfonamides have been used now for a sufficiently long time and in sufficiently large quantity to warrant an assay of what has been learned about them.

While attending some ear, nose and throat society meetings in Atlantic City last spring, I had an opportunity to interview many of the leading ear, nose and throat men of America. As best I could determine, the consensus of opinion expressed by a majority of these men was about as follows:

(1) There is little worth-while evidence to support a belief that sulfonamides, regardless of their variety of chemical formulae, have any great beneficial influence in the treatment of nasal sinusitis or mastoiditis, irrespective of what bacteria, virus or inflammatory agent produces the inflammation. In other words, the new compounds have been disappointing in the treatment of bone inflammations in the field of otolaryngology.

(2) In mastoiditis a preponderance of clinical experience has been accumulated to indicate that the masking of symptoms by the use of the sulfa compounds outweighs any possible benefit they may have.

(3) The question of whether or not the incidence of mastoiditis and its more serious complications have been affected favorably by the use of the new drugs cannot as yet be determined because a fluctuation in severity of epidemics over a period of years has been too adequately demonstrated in the past.

(4) There is little worth-while evidence to support a belief that these drugs are beneficial in virus inflammations, assuming that the diagnosis of a virus inflammation can be made with reasonable accuracy.

(5) A low white blood count is a definite contraindication to the use of the sulfonamides but some men believe that a low red blood count is more dangerous than a low white count.

(6) The drug never should be used unless preceded by a thorough physical examination including a careful and complete blood examination and urinalysis. Neither should its use be continued without an estimate of the concentration of the drug in the blood stream.

(7) In certain instances patients run a temperature from the use of these drugs.

(8) In soft tissue inflammations such as throat edemas and abscesses, with or without septicemia, many cases are reported in which lives apparently were saved by prompt use of the new compounds, but warnings occasionally are issued that relapses often occur after medication has been stopped.

(9) The new drugs offer the best treatment that has ever been had for septic meningitis.

(10) Certain sulfa drugs are also very effective when used in pneumonias showing a high white blood count.

This digest confines itself to an otolaryngologic point of view and has no bearing upon the observations and opinions of other specialists.

V. VISSCHER WOOD, M.D.

HYPERTENSION

Prognosis in Hypertension. Robert M. Daly; Harry E. Ungerleider, and Richard S. Gubner. J. A. M. A. 121:383 (February 6) 1943.

While the cause of hypertension remains obscure and treatment is unsatisfactory, and its importance as a prime cause of mortality in adult life looms increasingly great, there is reason for optimism. While hypertension is not conducive to longevity, it is compatible with longevity; therefore, it is pertinent to inquire into the various factors which determine the outlook in subjects with hypertension.

Hypertension is important as an indication of an underlying disease and because of the deleterious effects of the elevated blood pressure. Causes of hypertension may be classified into five groups; renal, endocrine and vascular lesions, disease of the central nervous system, and essential hypertension of unknown origin. The cases of hypertension in which the cause is known constitute a small fraction of the total number of cases having hypertension.

All the pathologic changes in hypertension can be explained reasonably as resulting directly from the mechanical effects of persistent elevated arterial tension acting on the cardiovascular system, resulting in arteriolar sclerosis, large artery atherosclerosis and cardiac hypertrophy, especially the left ventricle. Coronary artery disease is usually present and adds to the myocardial damage.

Thirty years ago authorities considered blood pressure values above 160 systolic and 100 diastolic as hypertensive; today arterial pressure of 140 systolic and 90 diastolic usually is considered the dividing line. The laity and many of the older doctors believed that the rule of 100 plus the age was normal blood pressure, but this is grossly inaccurate.

A study by the Joint Committee of the Association of Life Insurance Medical Directors and the Actuarial Society of America demonstrated that levels of blood pressure above 140 systolic and 90 diastolic are definitely abnormal at any age, and that the actual mortality exceeds the expected mortality in rapidly rising ratios for systolic and diastolic values above this level. They also found that life expectancy is much greater in persons having blood pressures below average normal values. It was found that in persons having systolic pressures from 22 to 18 mm. less than the average normal, the average ratio of actual to expected number of deaths was only 71 per cent.

It is becoming increasingly recognized that persons whose blood pressures rise to abnormal levels under any circumstances are predisposed to subsequent hypertension. Tests have been devised to determine this hypertensive potentiality. (These are outlined in the original article.)

The authors conclude that the more important factors to be considered to determine the prognosis in hypertension are: (1) Does a state of hypertension exist and if so what is its degree? (2) Can a known cause for the hypertension be found? (3) What is the extent of the organic changes in the heart, arteries, arterioles and

kidneys? These among other considerations, including sex, age and the presence of associated conditions such as diabetes and obesity, are important in estimating the life expectancy and the benefit which may be expected from therapeutic procedures available at the present time.

AUGUST A. WERNER, M.D.

A PATTERN FOR THE DIAGNOSIS OF PERSISTENT DERMATITIS ON THE HANDS OF HOUSEWIVES

The problem of dermatitis on the hands of housewives has become an acute one. This condition has increased to a great extent during the last five years. The principal factor in this has been the manufacture of new articles for household use. Soaps lead the list. Cleansing powders, wools used in knitting, varnishes, lacquers and even cosmetics are among the factors which actually produce this condition. It is not unlike the dermatitis produced in industrial workers in the different war plants.

A pattern is presented here for the diagnosis of these cases:

(a) Ringworm fungus infection of the feet, with allergic reaction on the hands, comprises about 37 per cent of these cases, according to Andrews. Careful examination of the feet and the Trichophyton test are indicated. If the test is positive, it shows only that the patient has, or did have, ringworm infection, and it may not be the cause of the dermatitis on the hands but, if negative, it is certain that ringworm is not the cause of the dermatitis on the hands.

(b) Allergic backgrounds constitute the next largest percentage of individuals who have dermatitis on their hands. One must always go into the allergic history, not only in the individual but in the family, and the presence of any of the five allergic diseases must be demonstrated or not demonstrated; to wit, eczema, hay fever, asthma, hives and migraine. The condition in these cases usually is due to foods and one should eliminate milk, wheat, eggs, peas, beans, spinach, chocolate and nuts as a routine thing. Rowe's elimination diet should be used from here on.

(c) Gastrointestinal deficiencies. Quite often these patients should have a gastric analysis and if there is a deficiency or absence of hydrochloric acid, this one factor alone can be responsible for the dermatitis on the hands.

(d) Vitamin deficiencies. Many of these patients complain of this dermatitis only in the winter time. Vitamin A and vitamin C should be given.

(e) Ovarian and thyroid deficiencies are responsible for some cases of dermatitis on the hands. One should ascertain by careful history whether or not there is such a deficiency. Part of this group will respond to treatment with ovarian and part of them to theelin-like preparations.

(f) George Andrews called attention to the focal infection group of cases. The dermatitis on the hands or feet is arranged in patterns, either triangular or square, with sharply demarcated borders. Tonsils, teeth or gall-bladder infections are often the factors behind these

cases and the removal of these conditions will clear the hands or feet.

(g) In direct infection of the hands themselves with hemolytic staphylococcus or streptococcus, cultures should be taken and an autogenous vaccine made if the hemolytic streptococcus or staphylococcus is found.

(h) Psoriasis of the palms or soles very often is confused with ringworm fungus infection. As a rule the scaling, dry dermatitis is in the center of the palm on either hand, although it may involve the palms of both hands. In these cases one usually can find lesions of psoriasis in the scalp or pin point lesions on the nails. The pustular type of psoriasis sometimes is encountered. This also can be diagnosed by finding lesions elsewhere on the body. Treatment in these cases should consist of large doses of crude liver concentrate, intramuscularly, Fowler's solution by mouth and exposure of the entire body to the ultraviolet light.

Any of these outlined conditions are a background to contact dermatitis in both housewives' hands and in industrial dermatitis, and all of these factors must be considered whenever a woman makes her appearance in the office with dermatitis of the hands.

CHARLES C. DENNIE, M.D.

MODERN TREATMENT OF CARCINOMA OF THE PROSTATE

A wave of enthusiasm has spread among urologists as to the treatment of prostatic malignancy since Charles Huggins of Chicago and others have presented theories of etiology and treatment by castration and the use of female hormones, estrogens.

In the December 1942 *Journal of Urology* appeared four articles which fairly well typify the status of present day therapy. E. P. Alyea and A. F. Henderson of Durham, N. C., presented a series of forty cases after calling attention to the fact that fifty years ago castration was performed for hypertrophy of the prostate with generally unsatisfactory results. Their theory is that there exists an androgen-estrogen balance, and if the estrogen is withdrawn in old age the androgen overactivates the pituitary gland, resulting in prostatic enlargement. A beautiful diagram emphasizes their theory.

Their cases, all castrates, showed immediate general improvement, changes in serum phosphatase, relief of metastatic pain and satisfactory changes in most bone metastasis.

Chute, Willetts and Gens of Boston presented twenty-seven cases in which the combined castration and estrogen (Stilbestrol) therapy was used with very satisfactory results except that they failed to note any improvement in bone metastasis. There was no harmful effect on mind or body such as the psychoses occasionally reported following castration.

Elmer Hess of Erie, Pennsylvania, reported an improved technic of castration by opening the tunica albuginea and removing only the secreting part of the testicle, resulting in a relatively small decrease in the scrotal contents. This technic also was suggested by Chute and others. The idea is to impress the patient psychologically, yet all the spermatogenic tissue is removed.

The fourth article is by Alexander Randall, of Philadelphia, who became interested in the subject of castration nine years previously because of some favorable reports of the effect of oophorectomy on breast cancer during the last fifty-three years. He states that he and his associate, Dr. Schofield, worked blindly compared with the more scientific investigations of today. Five patients were castrated during a period of two and one-half years. Four lived forty-three days, eight months, seventeen months and three and one-half years respectively, one of whom had three recurrences. The fifth case and most recent (six and one-half years) was alive but had developed metastases to the dorsolumbar spine five and one-half years after castration. His general symptoms were improved following roentgen ray therapy and Stilbestrol injections.

It is evident that Randall's report is less optimistic than many others. Since all of his cases had undergone resection of the bladder neck he feels that procedure should always receive its share of credit.

My own experience in more than thirty cases, with one death from other causes and one who derived little if any benefit, is a fair cross section of the above reports. Like Randall, I am of the opinion that resection for relief of bladder neck obstruction always should be considered. Then, too, one has the sections for pathologic study which serve not only for diagnosis but as permanent records if medico-legal problems should arise. Resection, vasoligation and the use of estrogens in the aged have proved almost as satisfactory in my hands as has orchidectomy.

Finally, one must conclude that urologists have come far within the last few years in the relief of aggravating symptoms associated with carcinoma of the prostate. Permanent cures are as yet doubtful.

NEIL S. MOORE, M.D.

ACUTE OTITIS MEDIA

Observations in Acute Otitis Media. John R. Richardson. *Ann. Otol., Rhin. & Laryng.* 51:804-815 (September) 1942.

Since this is the time of year when the incidence of otitis media is greatest, it is fitting to draw the attention of the medical profession to the latest methods of treating this disease. The following is from a paper prepared by Dr. John R. Richardson, Boston, and is based on five years' work in the Massachusetts Eye and Ear Infirmary together with reports in literature from other men and institutions on the use of chemotherapy by the sulfonamide group of drugs.

"If we take these six sets of statistics as fairly representative of the voluminous literature, several facts stand out. First there is a general agreement that the duration of aural discharge is decreased by the administration of chemotherapy. The figures vary. It is of course hard to determine any average, for the duration of discharge in acute otitis media varies greatly with the organism, the time of year, etc. Secondly, the majority of the reports indicate a marked decrease in the incidence of mastoid surgery. Again there is a great variance in the figures. The normal or control group varies from 8.37 to 69 per cent requiring a mastoidectomy. This incidence of mastoidectomy is cut down by chemotherapy to a rough average of 5 per cent. It is hard to get good figures in regard to the incidence of mastoidectomy in acute otitis media. The gen-

eral practitioner finds the incidence low. The otologist, seeing chiefly complications and hospital cases, finds the incidence high. The third point that I should like to make is that the authors agree that undrained pus in the middle ear or mastoid must be treated surgically. Chemotherapy alone does not and should not be expected to heal such cases. The next point is that there is general accord that mastoidectomies are most frequently necessitated in hemolytic streptococcus and pneumococcus ears. Mastoidectomies are likewise needful in the staphylococcus ears but uncommon in the other groups. Lastly there is a vast literature testifying to the efficacy of chemotherapy in the complications of mastoiditis. There can be no question but that the treatment of meningitis and septicemia has been revolutionized by chemotherapy.

"Because of the proved efficacy of the sulfonamide drugs in many diseases surgeons are placing an increased reliance on chemotherapy in acute otitis media. Due to the moral support of this drug therapy, the early or routine mastoid operation done in the first two weeks of the disease, an operation designed to prevent dread complications, has been largely abolished. Today instead of being told 'it is safer to operate than to wait' patients are given one of the sulfonamide drugs. This explanation may account for the seeming decrease in the incidence of mastoidectomy reported due to chemotherapy.

"As yet chemotherapy, by the sulfonamide group of drugs, is not playing the great role of preventing surgical mastoiditis that it is thought to do by many physicians."

J. L. MYERS, M.D.

CASTRATION OR STILBESTROL IN CARCINOMA OF THE PROSTATE

Carcinoma of the prostate has carried a high mortality rate in the past. Often it makes itself evident, clinically, only after it is well established. A minute or occult malignancy may metastasize with facility equal to that of the large irregular carcinoma; it spreads by painful, perineural routes and a lesion which has spread beyond the capsule of the prostate can very rarely, possibly 2 per cent, be removed satisfactorily by any surgical procedure. Further, any tumor tissue left behind after surgery, even as in the primary tumor, is in from 85 to 90 per cent of all cases resistant to radiation, either radium, radon or roentgen ray.

With this situation, the work of Dr. Charles Huggins (1941) for the first time gives hope. He studied the relationship of the male hormones (androgen) to carcinoma of the prostate and found that adult prostatic epithelial cells become atrophic by castration. W. P. Herbst (1941) also reported hopeful similar results with the administration of estrogen (Stilbestrol). Castration removed the androgen elaborated by the testes while Stilbestrol neutralizes the androgen. This gives the belief that there is a normal androgen-estrogen balance and

that adult prostatic epithelium is under control of the testes.

Acid phosphatase, an enzyme acting best in a Ph of 4.5, is found in adult prostatic epithelium. Its abundance in these cells follows the condition of the cell, increasing with administration of androgen, decreasing when the androgen is removed by castration or when neutralized with estrogen.

Carcinoma of the prostate is adult prostatic epithelial overgrowth. In these instances the amount of acid phosphatase increases. One can record the quantity of the enzyme in the blood serum in either Gutman or King-Armstrong units. Negative results are not acceptable but amounts above 10, King-Armstrong units, denote a diagnosis of carcinoma of the prostate. Given a metastatic lung or bone tumor with possibly a minute or occult carcinoma of the prostate, this laboratory procedure is of diagnostic value. The determination of alkaline phosphatase, an enzyme which acts best in a Ph of 9.5 is of little clinical value at present; its increase points to metastatic bone involvement.

Treatment of carcinoma of the prostate by castration is revolutionary. In December 1942, Alyea and Henderson reported forty cases in the *Journal of Urology* with only one death from carcinomatosis, immediate general recovery in all cases, remarkable relief of metastatic pain and healing of bone and lung metastases as determined by roentgen ray follow-up films. They also report that Stilbestrol causes regression of the primary growth but not to the same extent as castration.

At Washington University and Barnes Hospital administering Stilbestrol, 1 to 10 mg. by mouth daily, is favored. If relief is not suitable, then castration is considered. Transurethral resection is used when necessary to alleviate obstruction as the carcinoma may complicate an obstructive benign hypertrophy or possibly time cannot be allowed for relief of obstruction which usually follows within from thirty to ninety days after castration and more slowly with the administration of Stilbestrol. Long use of Stilbestrol causes hyperplasia of bladder, urethral and ureteral epithelium and may contribute to urinary blockage and therefore to a persistent infection. For this reason, if no other, rest periods in its administration should be ordered.

D. K. ROSE, M.D.

VITAMIN B₁ DEFICIENCY

May the Disease Complex That Includes Mega-Esophagus (Cardiospasm), Megacolon and Mega-Ureter Be Caused by Chronic Vitamin B₁ Deficiency? Eduardo Etzel. *Am. J. M. Sc.* 203:87, 1942.

In this excellent article the author points out that Brazil has an extremely large number of cases of cardiospasm, or mega-esophagus, as he chooses to call it. This geographic study was based on 626 cases, of which 549 were on record at the Santa Casa de São Paulo, covering a period of the last eighteen years. His own personal clinical experience is based upon a study of 170 cases, sixteen of which came to autopsy. He points out that in recent years clinical evidence would tend to show that mega-esophagus and megacolon might have a common etiology and that other manifestations of a similar nature might also be found ultimately to have a common etiology. He cites numerous references to

substantiate the simultaneous occurrence of these lesions in the same individual. Pylorospasm and mega-ureter are included as being of the same character. The lesion common to all of these conditions is interference with involuntary sphincter control of the smooth muscle, all of which are innervated by a comparable intramural autonomic nervous system. Dysfunction in any location results in proximal dilatation of the structure involved. Achalasia of the sphincter, that is, absence of relaxation of the sphincter, which should normally occur as a peristaltic wave approaches, does not occur. This absence of the normal relaxation, even without spasm of the sphincter, is sufficient to prevent uninterrupted passage. As a result stasis develops above.

The intramural autonomic nervous system extends throughout the entire digestive and urinary tracts. Examination of Auerbach's plexus demonstrated that certain cellular components were associated with developments of these defects in sphincter control of the digestive tract.

"The alterations of the cells were: dislocation of the nucleus to the periphery, central chromatolysis, micro-vacuolization and degeneration of the protoplasm. Bielschowsky-Gross's method showed pyknosis of the nucleus, expulsion of the nucleus, destruction of the neurofibrillar system and neuronophagia. The alteration of the axis-cylinder can be classified as cleavage, retraction balls of Cajal, argyrophilia and thickening and fragmentation of the axis-cylinder.

"Investigating a case of advanced bilateral mega-ureter, I was unable to even find the intramural nervous elements. These lesions are typically degenerative. In order to demonstrate that they are not secondary to the mere dilatation with consequent rupture of these elements, the cardia of dogs was partially occluded by ligature. This resulted in dilatation of the esophagus, but even after four months the plexus was found to be quite normal.

"We believe this degeneration is the result of a selective acting agent and thus is primary in type and not secondary to some factor influencing the entire involved organ."

It seemed logical to suppose that these degenerative lesions principally seen in the structures surrounding the cells and in the axis-cylinders were due to the same fundamental etiology. Effects produced on the heart showing electrocardiographic alterations were found also in a small group of these individuals who were studied.

A statistical review of the 626 cases was made in an effort to obtain a clue to the nature of the etiologic agent. This indicated that the majority of the patients were in rather poor social circumstances, suffering especially from deficiency in diet. The diet in these areas consisted principally of beans, polished rice, flour of manioc and crude cane sugar, although dried meat, eggs, potatoes, vegetables and milk occasionally were added. Such a diet was notably deficient in vitamin B₁.

Review of the literature shows that vitamin B₁ deficiency shows changes in Auerbach's plexus as well.

"Thus, we see that the disease occurs predominantly in young males of the laboring classes coming from regions where, for economic reasons, the diets are relatively unvaried and largely composed of carbohydrates and deficient in vitamin B₁. Being young male laborers, their total caloric demands are high. Their diet aside from being relatively deficient in vitamin B₁, is largely made up of carbohydrates

and thereby increases the demand for vitamin B₁ (caloric-vitamin ratio of Cowgill)."

The author points out that the degenerative process produced in Auerbach's plexus is irreparable and that, although some symptomatic improvement occurs on the administration of Vitamin B₁, actual regression and cure hardly can be expected in well established cases. However, he recommends the use of vitamin therapy in early cases in which function has not been destroyed completely.

"Summary and Conclusions.—The data presented tend to show that mega-esophagus (cardiospasm), megacolon, achalasia of the pylorus, mega-ureter and disturbances in the cardiac conduction system are but varied manifestations of the same disease. Achlorhydria, low metabolic rate and polyneuritis (peripheral reflex changes) are thought to be in the same clinical picture, even though not as clearly so.

"Degeneration in the intramural autonomic nervous system is believed to be the anatomic basis for these manifestations.

"A chronic or intermittent deficiency of vitamin B₁ is suggested as the etiologic agent responsible for the degeneration in the autonomic nervous system, thereby instituting a series of physiopathologic changes which culminate in the clinical picture described."

L. R. SANTE, M.D.

A NEW FORM OF SULFATHIAZOLE CURES A SKIN DISEASE IN A DAY

A single application of a new physical form of the sulfonamide drugs in the treatment of impetigo contagiosa, a pus producing skin infection caused by staphylococci, has, from his experience with the method thus far, been found to cure the condition within a day and to stop the spread of the disease, T. N. Harris, M.D., Philadelphia, reports in *The Journal of the American Medical Association* for February 6.

"Until quite recently," Dr. Harris says, "the therapy [treatment] of impetigo was rarely considered in the medical literature. . . . Since the outbreak of the present war, however, there has been a sharp increase in the frequency of such investigations, and many studies of new methods of treatment of impetigo have been reported in the British literature. This is quite in keeping with the natural history of the disease, since its spread is favored by a deterioration in sanitation and by crowding. . . ."

Dr. Harris points out that in other treatments the percentage of cure ranges from 80 to 100 per cent and the number of days required ranges from a few days to almost a month, usually ten to fourteen days. During this period treatments must be administered often and removal of crusts requires frequent attention.

He says that the basis for a rational improvement in the treatment of impetigo by local application of the sulfonamides was provided by Leslie A. Chambers, Ph.D., and his associates in a report published in *The Journal* for May 23, 1942. Chambers and his associates at that time announced the development of a procedure which reduces the crystal size of sulfathiazole into what they term microcrystals. Dr. Harris says that this method yields a stable suspension of fine crystals of sulfonamide and that the drug remains stable in pure water for at least many months. "This last property presents an important contrast to the behavior of a crushed ordinary sulfonamide compound, which settles and cakes when suspended in water," he explains. "Finally, when allowed to dry, the suspension becomes a fine . . . powder. . . ."

"In the present study a 20 per cent suspension of microcrystalline sulfathiazole was used. In treating impetigo locally with this preparation I employed the following technic: A drop or two of the suspension

was poured onto a small gauze dressing. It was found that the water would seep into the few layers of gauze to a greater extent than did the crystals. This would concentrate the sulfonamide crystals on the surface of the dressing, leaving a small white collection of pure sulfathiazole in water, of the consistency of fresh mud. The actual treatment consisted simply in applying the dressing thus prepared to the skin, the bit of sulfathiazole paste being placed in contact with the lesion. The only preparation of the area was washing with ordinary soap and water, with removal of all the crusts. . . . One small dressing was applied to each lesion.

"On removal of the dressing twenty-four hours later, the lesion was always found to be healed. As the dried dressing was removed the residual drug would come off the site of the lesion in a dust or a . . . powder. . . ."

"Fifteen children from institutional and private practice were treated in this manner, with a total of 293 lesions. . . . The observations made when the dressing was removed a day later were identical in 290 of the 293 lesions treated. . . . Thereafter, no further treatment or care would be given to the site of the lesion. . . . In no instance did any additional lesions develop or appear from the time of treatment of the original ones, either on the subjects or their institutional neighbors. . . ."

"The improved results in the treatment of impetigo reported here are due only to the physical form of the agent and its chemical simplicity. Ordinary sulfonamide powders cake on lesions of impetigo. . . . Although most of the lesions were observed twenty-four hours after treatment, there is no evidence that that length of time is required. The last patient of the series, originally exhibiting 23 lesions, had the dressings removed in about sixteen hours, with the usual results. . . . The complete halting of the spread of the disease from the time of treatment, which has been observed thus far, is of considerable practical importance. Taken in conjunction with the single treatment required, this means that the checking and treatment of an epidemic of impetigo, even in a crowded group, is completed within an hour or so of the time treatment is begun. . . ."

"Sulfathiazole was used in these studies because of its availability and its effectiveness on both streptococci and staphylococci. Microcrystals of other sulfonamide compounds have been produced and would presumably be as effective against susceptible bacteria."

JOURNAL HAILS SUCCESS OF THE CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Outlining the highlights of the statements made by high officials of government agencies and the Army and Navy before the thirty-ninth Annual Congress on Medical Education and Licensure, held in Chicago February 15-16 under the sponsorship of the Council on Medical Education and Hospitals of the American Medical Association, *The Journal of the Association* says in its February 27 issue that the Congress "was one of the most successful ever assembled. Indeed the results establish the necessity of the assembly in wartime. . . ."

"American medicine has performed remarkably in meeting the demands placed on it for the war effort. The officials of the government and officers of the armed forces who have been charged with the task of providing for medical care have been sympathetic to the needs of medical education and of civilian medical practice. The accomplishment of the Council on Medical Education and Hospitals in providing at this congress statements from authoritative sources as to present plans and changes contemplated for the future in medical education and in medical practice merits the appreciation particularly of medical educators, since it stabilizes definitely a situation full in recent months of apprehension and doubts."

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MARCH, 1943

EDITORIALS

ABSTRACTS AND DIGESTS

THE JOURNAL is establishing a new section with this issue, "Abstracts and Digests," reviewing recent medical literature. Because of the increasing demand on the time of physicians, it is felt that by presenting abstracts of specific articles or digests of the literature on various subjects, the physician can choose the articles which he wishes to read in detail and also can be informed on medical literature that is not in his specific field without the amount of reading otherwise necessitated. It is hoped that the most valuable articles appearing in medical journals can be presented promptly in abstract form to members of the Association.

THE ANNUAL SESSION

The Missouri State Medical Association will convene for its 86th Annual Session in St. Louis, April 18, 19 and 20, 1943, at the Jefferson Hotel. While the session will cover parts of three days, it will be only two days in length. The first session will open at 2:00 p. m. on Sunday, April 18, and the last session of the House of Delegates will close at noon on Tuesday, April 20. This is in accordance with the decision of the Council that the time of the session should be shortened to two days in view of the demands at present on the time of physicians. The business of the Association will be conducted on Sunday afternoon and Tuesday morning. Monday will be devoted to scientific work.

The scientific portion of the session, to be presented on Monday, April 19, will be in the form of round table discussions running consecutively through the day. Two or more physicians will open the discussions by short presentations on the subject and then answer questions and hear discussion from the floor. This plan was decided upon by the Committee on Scientific Work as the best way to present practical information and make the session of the most value to members. Topics to be presented in the round table discussions are: Sulfonamides, Burns, Poliomyelitis, Industrial Medicine as Related to Physical Examination and Industrial

Hazards, Syphilis, Anesthesia, Respiratory Disease, Transfusions.

The Committee on Maternal Welfare and Infant Care will have its annual round table luncheon meeting at noon on Monday with Dr. Buford G. Hamilton, Kansas City, as guest.

The St. Louis Medical Society will be host to members at an entertainment on Monday evening.

Thirty-five companies will have technical exhibits displaying new pharmaceutical products and apparatus.

The schedule of the session will be: Sunday, April 18, 2:00 p. m., House of Delegates. Monday, April 19, 8:30 a. m., scientific session; 12:00 noon, Maternal Welfare luncheon meeting and meeting of the Council; 2:00 p. m., scientific session; 8:00 p. m., entertainment with St. Louis Medical Society as host. Tuesday, April 20, 9:00 a. m., House of Delegates; 12:00 noon, meeting of the Council. Dr. Morris Fishbein, Chicago, will be the guest speaker at the Annual Banquet in honor of Past Presidents on Sunday evening.

The General Committee on Arrangements is composed of Drs. Curtis H. Lohr, St. Louis, Chairman; H. B. Goodrich, Hannibal, and C. E. Fallet, DeSoto. The local committees on arrangements follow:

Chairman: Dr. Neil S. Moore.

Executive Committee: Drs. Neil S. Moore, Chairman; Robert Mueller and Curtis H. Lohr.

Technical Exhibits: Drs. Paul S. Lowenstein, Chairman; H. A. Hassett and D. K. Rose.

Scientific Exhibits: Drs. O. P. J. Falk, Chairman; E. L. Keyes and Hollis N. Allen.

Registration: Drs. Carl F. Vohs, Chairman; Grace Scholz Mountjoy, Paul Schnoebelen and Claude Pickrell.

Publicity: Drs. Rogers Deakin, Chairman; Maxwell Fineberg and J. Grey Jones.

Entertainment: Drs. B. J. McMahon, Chairman; Theodore H. Hanser, Emil A. Burst and Joseph Grindon, Jr.

Banquet: Drs. Edwin C. Ernst, Chairman; Frank Bradley, Llewellyn Sale, M. J. Pulliam, E. W. Spinzig, A. J. Raemdonck, Edwin J. Schisler, E. C. Funsch, R. O. Muether, Joseph E. Glenn, Charles A. Kelly, Armand D. Fries, Otto S. Krebs, James L. Mudd, O. B. Zeinert, E. M. Fessenden, G. Lynn Krause and Andy Hall.

Finance: Drs. Robert E. Schlueter, Chairman; J. William Thompson, Treasurer; Victor E. Scherman and Henry P. Thym.

Hotels: Drs. George F. Rendleman, Chairman; F. G. Pernoud and Dudley Smith.

Advisory: Dr. E. V. Mastin, Chairman; Ft. A. M. Schwitalla, S.J.; Drs. Philip A. Shaffer, Joseph Grindon, Sr., John C. Morfit, Robert E. Schlueter, Louis H. Behrens, R. Emmet Kane, A. H. Hamel, Cyrus E. Burford, William W. Graves, William H. Vogt, Roland Hill, Fred W. Bailey, Charles H. Neilson, Cleveland H. Shutt, Vilray P. Blair, Charles E. Hyndman, Frank J. V. Krebs, Neil S. Moore, Curtis H. Lohr, Joseph C. Peden, Frederick

E. Woodruff, R. V. Powell, Alvin E. Vitt, Peter G. Danis, Armand D. Fries, Rogers Deakin, Fred Kramer, Paul F. Titterington, Joseph A. Hardy, Jr., Lawrence D. Thompson, Charles L. Klenk, Ellsworth Kneal, J. Anthony Brennan, Glover H. Copher, Victor E. Scherman, Drew Luten, W. Kress McIntyre, Evarts A. Graham, Barry Wood, Louis Rassieur, Ralph A. Kinsella, Emma Phelan, Fred J. Taussig, Major G. Seelig, Garold V. Stryker, J. Joseph Link, Carroll Smith, Frank J. Tainter and Ralph L. Thompson.

HEARING ON HOUSE BILL No. 85

The Public Health Committee of the House of Representatives heard an interesting and informative debate on House Bill No. 85 on Wednesday evening, February 17, at 8:00 p. m. in the House Chamber of the State Capitol. The proponents of the bill believe that this is a propitious time to extend the services of osteopaths to all tax supported hospitals in Missouri. It was pointed out further by them that this would be a fitting climax to the celebration of the 50th anniversary of the founding of the Kirksville School of Osteopathy.

Apparently the meaning of the term "physician" is not clear in the proponents' minds as the bill proposes to classify the osteopathic practitioner as a physician by mere legislative definition. Undoubtedly, it would be much easier for the individual osteopath to secure the coveted title "physician" by legislation than through the regular channel followed by the Doctor of Medicine.

The opponents to House Bill No. 85, who believe the standards of medical care would be lowered by passage of this bill, brought forth the almost certain loss of class A ratings to those hospitals affected by this bill becoming a law. As a consequence of this, such hospitals would, in all probability, be unable to secure interns, nurses, resident and visiting staffs of physicians in sufficient numbers to continue operation. A situation of this nature would be catastrophic to the health and welfare of a large percentage of the citizens of Missouri who now receive the best of medical care in these institutions.

A comparison of the educational facilities for osteopathic training in the Kirksville School of Osteopathy to those facilities offered by the University of Kansas School of Medicine for medical students as presented to the Committee widens the present distinction between an osteopath and a physician while House Bill No. 85 seeks in one sweep to eliminate this distinction by legislative action alone.

It was maintained by opponents of the bill that if osteopaths were to have the rights and duties of the practice of medicine, they consequently should secure equal training and then pass the same medical licensure examination as required of Doctors of Medicine. If not willing or able to do this, then osteopathic practitioners should confine their services to the practice of osteopathy in accord with the

meaning of the term. This point is well taken and, if fulfilled, a solution to the entire problem will have been found.

The Committee was informed that no osteopath has been commissioned as a medical officer in the armed services of the United States. Furthermore, between 1,100 and 1,200 physicians from Missouri have left their homes and families to give their all in service of their country. The question was asked, "Is it fair to pass a bill of this kind which will so vitally affect the future of those physicians in the armed services while they are away with no opportunity to have a voice in the matter?" Herein is involved a fundamental of Democracy as well as a deep moral obligation.

At the close of the hearing the Committee went into executive session and by a vote by secret ballot of 11 to 7 recommended passage of the bill.

It is quite conceivable that subsequent activity in connection with this bill will prove exceedingly interesting to all concerned.

PERIARTERITIS NODOSA, HYPERSENSITIVITY, SERUM SICKNESS, AND THE SULFONAMIDES

The possibility that periarteritis nodosa may be the result of hypersensitivity has been suggested by many investigators. Rachemann and Greene¹ studied eight cases of bronchial asthma and observed the lesions of periarteritis in two. They collected the reports of 229 cases of periarteritis nodosa in the literature and found that bronchial asthma was mentioned as a complicating condition in nineteen. From the standpoint of general pathology there is also the evidence that one of the preponderant cells in periarteritis is the eosinophil, and that in general the eosinophil is associated with inflammations related to hypersensitivity. In two fatal cases of serum sickness Clark and Kaplan² found arterial lesions similar to or identical with those of periarteritis.

Shortly after the introduction of the sulfonamides as therapeutic agents, many types of untoward reactions were observed, notably, those appearing many days after the use of the drug. The dermal lesions of urticaria and other types of reaction suggested a resemblance to lesions usually seen following sensitization. Chemical proof for this concept has been given recently by the studies of Wedum.³ Sulfanilamide and sulfapyridine and sulfadiazine were conjugated with egg white, beef serum, human serum or rabbit serum, according to the Landsteiner technic. An excellent sensitization was secured in guinea pigs as tested by dermal reactions and by lethal anaphylactic reactions. Precipitins could be demonstrated in the blood serum

1. Rackemann, F. M., and Greene, J. E.: Periarteritis Nodosa and Asthma, *Tr. A. Am. Physicians* 54:112-118, 1939.

2. Clark, E., and Kaplan, B. I.: Endocardial, Arterial and Other Mesenchymal Alterations Associated with Serum Disease in Man, *Arch. Path.* 24:458-475, 1937.

3. Wedum, A. G.: Immunological Specificity of Sulfonamide Azoproteins, *J. Infect. Dis.* 70:173-179, 1942.

of rabbits sensitized with these conjugated proteins.

Recently Rich⁴ has made an important contribution that brings together many of these apparently diverse observations. Rich found vascular lesions characteristic of periarteritis nodosa in the viscera of five patients who shortly before death had hypersensitive reactions following therapeutic injections of foreign protein. Four of the patients had received the sulfonamides. Identical lesions also were found in the viscera of a patient who received prophylactic sulfonamide therapy against aspiration pneumonia.

Rich concludes that these observations indicate that vascular lesions of the type known as periarteritis nodosa can be a manifestation of the anaphylactic type of hypersensitivity and suggests the importance of a search for the inciting antigen in patients with serum sickness, with sulfonamide hypersensitivity and with known periarteritis nodosa that come to clinical observation.

NATIONAL CONFERENCE ON MEDICAL SERVICE

Representatives of the medical profession from all sections of the United States met in Chicago on February 14 for the seventeenth annual meeting of the National Conference on Medical Service. Two main topics were covered; namely, analysis of current trends in the control of medicine and medicine in the postwar era.

Current trends in medical practice, including the much discussed future possibility of state medicine, were reviewed from several standpoints under the subjects of "Effect on Medical Education," "Significance to Medical Licensure," "Outlook for Dentistry," "Hospital Problems" and "The Doctor of Medicine and His Responsibility." It was pointed out that the medical profession must educate the people to what political control of medicine would mean. Furthermore, there must be developed a better relationship between medicine and the press. The primary responsibility here lies in the hands of the medical profession as a whole. Educating the people in the history of medicine and its progress is essential to the protection of public health in the future.

With the every day trend pointing to more universal health service, it was maintained that the profession should direct and manage such programs. The various prepaid medical service plans form the basis of these endeavors. The speakers were insistent that leadership in all matters relating to health should come from the medical profession.

The recent Supreme Court decision was taken as evidence indicating a need for more public education in regard to problems of medical care. The physicians must become able to acquaint Federal administrators and welfare agencies with the disadvantages of socialized medicine.

4. Rich, A. R.: The Role of Hypersensitivity in Periarteritis Nodosa, *Bull. Johns Hopkins Hosp.* 71:123-140, 1942.

A resolution was passed by the Conference to be presented to the Board of Trustees of the American Medical Association asking the adoption of a stronger national legislative and economic policy governing the practice of medicine. It was suggested further that the American Medical Association call in for conferences medical economic committees of the state associations as well as representatives of the various prepaid medical service plans to discuss and guide their procedures.

It should not be overlooked that the physician in the Medical Corps of the Army and Navy of the United States will return to the type of practice for which those now in civil practice are willing to fight.

NEWS NOTES

Dr. Bertalan Bolgar, Festus, has been appointed county physician of Jefferson County.

Dr. H. C. Gaebe, Desloge, has been reappointed county health physician of St. Francois County.

Dr. J. R. Amos, Springfield, county health officer of Greene county, is conducting a first aid class for industrial workers at Springfield.

Dr. J. D. Smith, Shelbina, observed his ninety-fourth birthday on January 23. Dr. Smith practiced medicine in Shelbina from 1873 until a few years ago when he retired.

Dr. Roland M. Klemme, St. Louis, was a guest of the New York Academy of Medicine in New York, February 9 and spoke on "The Neural Mechanism of Paralysis Agitans."

The American Pharmaceutical Manufacturers' Association made its 1942 award of a scroll of distinction to Dr. Edward A. Doisy, Ph.D., St. Louis, for fundamental scientific contributions in the field of hormones.

A two-day Child Health and Protection Institute was held in Kansas City, January 19 and 20, under the sponsorship of the Kansas City Children's Bureau. Physicians who took part in the institute are Drs. R. Lee Hoffmann, C. R. Ferris, Herbert L. Mantz, A. Graham Asher, Herbert J. Rinkel, John S. Knight and B. Landis Elliott, Kansas City.

The Missouri State Board of Health reports that twelve physicians were licensed to practice in Missouri following examinations held on October 15 to 17. One applicant failed to pass the examinations. On November 16 the Board licensed eight physicians by reciprocity and two physicians on endorsement of credentials of the National Board of Medical Examiners.

Dr. G. Foard McGinnes has been appointed Director of Medical and Health Service of the Midwestern Area of the American Red Cross with headquarters in St. Louis. Dr. McGinnes has been Director of Venereal Disease Control Service of the Tennessee Department of Public Health and Associate Professor of Preventive Medicine of the University of Tennessee and Chief of the Department of Syphilology at Meharry Medical College since 1929.

A civilian (physicians') instructor's course on "Medical Aspects of Chemical Warfare" was given at Northwestern University Medical School, Chicago, for Civilian Defense Regions 6 and 7 on January 14, 15 and 16. Drs. Robert Elman, Thomas M. Martin, Henry E. Oppenheimer and Leo J. Wade, St. Louis, attended the course. Dr. Granville Bennett, Medical Gas Officer of O.C.D., Washington, D. C., consulted with St. Louis physicians and state and city gas consultants concerning instruction for Missouri physicians in St. Louis on January 29.

ORGANIZATION ACTIVITIES

DR. DORSETT APPOINTED CHAIRMAN

Dr. E. Lee Dorsett, St. Louis, has been appointed Chairman of the Committee on Maternal Welfare and Infant Care by the President to fill the unexpired term created by the death of Dr. Ralph Rust Wilson, Kansas City.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

The discussions presented at the Annual Congress on Medical Education and Licensure which convened in Chicago, February 15 and 16, indicated that serious problems are involved in present medical licensure procedures. A number of states are introducing bills into their respective legislatures to permit temporary licenses for out-state physicians during the war emergency. It was pointed out that lowering of present licensure standards must be guarded against in such procedures and the question of what to do with physicians who hold temporary licenses after the war cannot be overlooked. On the other hand, in states in which a critical shortage of physicians exists, it was suggested that temporary licensure seemed to be the most logical solution to the problem.

If there existed at the present time more universal reciprocity between state licensure boards, this problem could be solved with little difficulty. During the last sixteen years, seventeen states and the District of Columbia have enacted basic science laws. This presents an additional problem in reciprocity with states which do not have these laws. If all states would enact similar basic science laws, the matter of reciprocity would become a much smaller problem.

The plan for furnishing medical personnel as well as personnel in other fields for the Army and Navy during 1943, 1944 and 1945 was explained by Brig. Gen. Joseph N. Dalton. Approximately 80 per cent of the facilities of the medical schools will be used. Men will be selected by examination for specialized training courses after a basic training period of thirteen weeks. Those to be trained in medicine will be given sixty-four weeks of premedical work and then trained for a medical degree. Upon being graduated in medicine, men will be commissioned as first lieutenants and placed on inactive status so that they may complete a year of internship. Men between 18 and 22 may be selected for this program and will receive the \$50.00 monthly pay of enlisted men. It was pointed out that no change in the standard of medical training was considered.

INCIDENTALLY

FROM THE ACTING SECRETARY

The Public Health Committee of the House cannot discard the fact that more than one hundred members of the Community Health League, including physicians, hospital officials and others interested in the public health of the citizens of this state attended the public hearing in opposition to House Bill No. 85. Approximately seventy opponents of this bill attended a "get together" dinner preceding the hearing. It was quite noticeable that a few areas of the state were not represented in opposition to the bill. Does this represent, "A let John do it attitude"?—The Community Health League is an organization formed for the purpose of protecting and improving the health and welfare of the people of Missouri. In serving this function many indirect advantages accrue to those who support the League.

Proponents of House Bill No. 85 stated at the hearing that the Attorney General recommended that such a bill be written and introduced.—The physicians of this state, being responsible for the public health, will have to interpret the bill primarily in terms of what effect passage of this bill will have on the future health of the citizens of Missouri.

The St. Louis *Post-Dispatch* of February 19 in an editorial entitled "No Place for Osteopaths" states that the house of Representatives should have no hesitation in killing House Bill No. 85 which was approved by the House Public Health Committee on February 17. It further states, "The osteopath simply does not have the same training and knowledge as the graduates of a standard medical school. He is, under the laws of a good many states, free to practice. There is debate even about the propriety of this, but there can be no question about letting him into a good hospital on the same basis as a thoroughly trained man."

The program of the National Conference on Medical Service presented in Chicago, February 14, clearly demonstrated the alarm of the medical profession in regard to current trends in the control of medicine.—The recent supreme court ruling was cited many times during the discussions.—Papers were presented with recommendations and proposals for medicine in the postwar era.—Conferences of this type are stimulating.—The question was asked "Why does not the medical profession unionize and thereby gain some of those advantages of protection held by labor unions?"

The Annual Congress on Medical Education and Licensure held in Chicago February 15 and 16 brought out fairly conclusively that the Army and Navy expect to educate sufficient physicians to supply their needs for the duration.—This would indicate that no more physicians will be taken from civilian practice after 1943.

There seems to be much disagreement as to whether or not state medical licensure boards should grant temporary licenses to permit interstate relocation of physicians as a war measure.—Some state boards feel that such a procedure would lower the standard of medical practice in their state.—Others maintain that the big problem is to get physicians into areas where there exists a critical shortage of medical care and that temporary licenses if properly issued would not lower medical care standards.—Apparently it is rather difficult to get physicians to agree on a number of things and this is no exception.

Thanks to the Lafayette, Buchanan, Lewis-Clark-Scotland, South Central, Dallas-Hickory-Polk, Ste. Genevieve County medical societies for courtesies extended at their recent meetings.

Much is being talked and written concerning postwar social planning.—Are you following this same philosophy in making plans to attend the 1943 Annual Session of the Missouri State Medical Association, April 18, 19 and 20, Jefferson Hotel, St. Louis?—This is your meeting—can you expect it to be successful without your presence?

DEATHS

Pierce, Don, M.D., Wyaconda, a graduate of Barnes Medical College, 1901; member of the Lewis-Clark-Scotland County Medical Society; retired from practice; died December 30; aged 68.

Miller, Thomas F., M.D., Lamar, a graduate of the Missouri Medical College, 1899; member and past president and secretary of the Barton County Medical Society; died January 10; aged 65.

Dunn, Frank P., M.D., Webster Groves, a graduate of the Marion-Sims College of Medicine, 1898; member of

the St. Louis County Medical Society; retired; died January 13; aged 73.

Durbin, Howard Paul, M.D., Kirkwood, a graduate of St. Louis University School of Medicine, 1927; member of the St. Louis County Medical Society; Fellow of the American Medical Association; died January 17; aged 47.

Wilson, Ralph Rust, M.D., Kansas City, a graduate of Harvard Medical School, 1923; member of the Jackson County Medical Society; Fellow of the American Medical Association; died February 6; aged 47.

Died While in Military Service

Panettiere, Andrew Henry, M.D., St. Joseph, a graduate of Creighton University School of Medicine, 1935; member of the Buchanan County Medical Society; Fellow of the American Medical Association; Captain in the Medical Corps of the Army of the United States; entered active duty about two years ago and left this country March 18, 1942, and served in Australia and New Caledonia; killed in action November 23; aged 33. (See correspondence, page 93.)

OBITUARY



RALPH RUST WILSON, M.D.

Dr. Ralph Rust Wilson, Kansas City, was an active force in organized medicine and in maternal welfare work in Missouri for many years. He became a member of the Association at the time he began practice and since that time has been increasingly influential in Association activities and in public health work in the state in addition to a constantly increasing private practice.

Dr. Wilson was born in Richmond, Missouri, May 16, 1896. He received his academic education at Central College, Fayette, and the University of Missouri. He received his medical degree from Harvard Medical School in 1923 and interned at the Boston City Hospital. He began the practice of obstetrics and gynecology in Kansas City in 1925.

He became a member of the Jackson County Medical Society, the Missouri State Medical Association and the American Medical Association in 1925. He was a member of the Kansas City Obstetric and Gynecology

Society, the Kansas City Southwest Clinical Society, the Kansas City Academy of Medicine, the Central States Association of Obstetricians and Gynecologists, the Travel Club and was a Diplomate of the American Board of Obstetricians and Gynecologists. He was chief of the obstetric and gynecology section of St. Luke's and Kansas City General hospitals. He was a member of the Sigma Chi and Phi Beta Pi fraternities.

The Committee on Maternal Welfare of the Association was created in 1935 with Dr. Wilson as Chairman, a position he held with the exception of one year until the time of his death. In this capacity he not only served members of the Association but in cooperation with the State Board of Health influenced changes in the standard birth certificates, served on the Advisory Committee for the State Board of Health, through the Committee cooperated in the Missouri Plan for Maternal Welfare and Child Care with the State Board of Health and the Children's Bureau. He was largely responsible for the "refresher courses" on obstetrics and pediatrics presented by the State Board of Health throughout the state. Dr. Wilson established the annual Maternal Welfare round table luncheons at the Annual Sessions.

Dr. Wilson died February 6 of a heart attack suffered after having attended a staff meeting at the hospital in the morning and seeing patients at his office.

He is survived by his widow, Mrs. Betsy Henderson Wilson, a daughter, Mary Elizabeth, 2½ years old, and a son Ralph Rust, Jr., 1 year old.

MISCELLANY

ADDITIONAL MEMBERS OF THE MISSOURI STATE MEDICAL ASSOCIATION IN MILITARY SERVICE

Ahlefeld, C. B., Kansas City
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Young, John H., Galena

THE SUPREME COURT DECISION

The following appeared in *The Bulletin* of the Tulsa County Medical Society for February:

In Washington last month the Supreme Court of the United States upheld a conviction by lower federal courts of the American Medical Association and an affiliated society on charges of "criminal conspiracy to restrain trade."

The effects of this conviction are so far-reaching in character as to place the legitimate practice of medicine in the United States in deadly peril. How true or justified were the complaints aired in this particular case against organized medicine, we cannot say. But, there can be no doubt as to the truth of the statement that the decision rendered in one single stroke opens the way for nullification of the high standards of medical practice. Two hundred years of constant striving for maintenance of these standards as a safeguard to public health are jeopardized.

The decision assumes that the American Medical Association and, consequently, its component state and county organizations, have imposed criminal restraints on the practice of medicine. It is not outside logical reasoning to assume that these "criminal restraints" might include:

(1) The right of members of the medical profession to determine the educational and ethical standards necessary to qualify persons for rendering medical service.

(2) The right of members of the medical profession to "practice medicine" as an exclusive privilege. Presumably, a lay person would now enjoy this right.

(3) The right of members of the medical profession to determine the standards of operating conditions in hospitals, to maintain control over qualifications for staff membership and to exert influence over conditions of intern training.

Legal action can now be taken to remove these "criminal restraints," presumably through the use of injunction.

The potential results, which are as eminent as tomorrow, would include the removal of safeguards against quackery and charlatanism, the paralysis of medical societies as scientific bodies, and the sacrifice of the status of every legitimate physician in the country. The complexities arising from these basic results are not pleasant to consider.

Now that this conviction has been confirmed, there remains only one method of securing a permanent safeguard for public interests in medicine—federal legislation. The decision of the Court of Appeals clearly indicates that it is the function of the legislature to give professional groups enlarged powers, not the duty of the court "to recognize a privilege based upon preemption or usurpation."

A move is now on foot in Congress to give the professions—including medicine, dentistry, engineering, law—exemption from anti-trust law provisions and to accord professional organizations the same rights which are now accorded by law to labor unions. Every doctor

can help by expressing to his congressional representatives a conscientious opinion on the matter. The time to act is now!

LEGISLATION STATE

The following bill was introduced into the House of Representatives on January 26:

House Bill No. 85

62ND GENERAL ASSEMBLY

Introduced by Representative Still.

Read 1st time January 26, 1943, and 500 copies ordered printed.

LEONARD E. NEWTON, Chief Clerk.

An Act

To amend Article II, Chapter 4, Revised Statutes of Missouri, 1939, relating to "Construction of Statutes," by adding a new Section to said Article to be known as Section 656 A, providing for the statutory construction and definition of the word "physician" and the word "surgeon," (including the derivatives and contractions of either of said words,) used in any Missouri Statutes relating to professional personal services rendered or to be rendered professionally in practicing the healing art and in performing public health, safety, and sanitation services and precautions.

Be it enacted by the General Assembly of the State of Missouri, as follows:

Section 1. That Article II, Chapter 4, Revised Statutes of Missouri, 1939, relating to "Construction of Statutes," be, and the same is hereby amended by adding a new Section to be known as Section 656 A, providing for the Statutory Construction and definition of the word "physician" and the word "surgeon," (including the derivatives and contractions of either of said words,) used in any Missouri Statute relating to professional personal services rendered or to be rendered professionally in practicing the healing art and in performing public health, and sanitation services and precautions, so that said Article and Chapter, when so amended, shall read as follows, immediately following the provisions of Section 656:

Section 656 A. The word "physician" and the word "surgeon," (including the derivatives and contractions of either of said words,) used in any Missouri Statute, are not there used in any sense permitting the words to be construed by any person or persons to include a legislative intent to regard with favor or preference, or to necessitate professional physical examination, or professional treatment, or professional public health measures and precautions, by a doctor practicing the healing art pursuant to the provisions of Chapter 59, Article 1, Revised Statutes of Missouri, 1939, to the exclusion or rejection of professional physical examination, or professional treatment, or professional public health measures and precautions, by a doctor practicing the healing art pursuant to the provisions of Chapter 62, Article 1, Revised Statutes of Missouri, 1939:

Provided further, that the word "physician" and the word "surgeon," (including the derivatives and contractions of said words,) used in any Missouri Statute other than their use in Article 1 of Chapter 59, Revised Statutes of Missouri, 1939, and Article 1, Chapter 62, Revised Statutes of Missouri, 1939, shall be construed by all persons as a legislative intent to include the practitioners of any school of medicine recognized by the laws of Missouri, including the practitioner of an Osteopathic school of medicine recognized by the laws of Missouri, as being endowed with definite privileges, rights and duties, as follows: To practice as doctors their respective arts of healing by giving physical examinations

and by prescribing remedies and treating diseases of the human mind and body, and thereby endeavor to alleviate diseases and pain of any patient, including the privilege, right and duty to practice their respective healing arts in all hospitals or institutions built or maintained by revenue derived from public taxes; to practice as doctors their respective healing arts by rendering public health, public safety, and public sanitation services and public precautionary measures sanctioned by any Act of Congress or sanctioned by any Missouri Statute.

This bill was recommended do pass by the Public Health Committee.

Committee Substitute for House Bill No. 45 provides for a laboratory serological test for syphilis from applicants for a marriage license; provides for an affidavit by the applicant for a marriage license stating that the applicant believes himself or herself to be free from infection with syphilis; provides for a physician's certificate in the case of applicants with positive tests; provides for exemption in case of deathbed marriages and in case of marriages where an applicant is pregnant; provides that the laboratory blood test, the applicant's affidavit and the physician's certificate shall be made not longer than fifteen days before the date of the issuance of a marriage license; provides that any license to marry issued hereunder shall be void ten days after the date of issuance; provides that the validity of an otherwise legal marriage shall not be impaired by violation of any of the provisions of this Act.

This bill has been passed by the House of Representatives and was introduced in the Senate on February 11.

Senate Bill No. 9 defines and regulates the practice of naturopathy; creates and provides for the appointment of a board of naturopathic examiners; prescribes the duties of such board and the members thereof; prescribes the fees to be paid to the board by an applicant for license; provides for the licensing of naturopathic physicians; provides for the registration, renewal and revocation of such license; provides penalties for the violation of this act. Section 1 of the act reads: "Naturopathy declared not to be the practice of medicine. The system, method or science of treating diseases of the human body, commonly known as naturopathy, and as taught and practiced by the recognized schools of naturopathy, is hereby declared not to be the practice of medicine and surgery within the meaning of Chapter 62, and not subject to the provision of said article.

This bill was recommended do not pass by committee.

The Public Health Committee of the Senate is composed of the following: Senators Jess D. Sexton, Lawson; M. E. Casey, Kansas City; J. C. Riggan, Milan; W. R. Walker, Carrollton; Frank P. Briggs, Macon; W. W. Sunderwirth, El Dorado Springs; Joe G. Lightner, Odessa; H. R. Williams, Cassville; L. D. Joslyn, Charleston; Arnold Leonard, Joplin; Anthony M. Webbe, St. Louis; Otto L. Lietchen, St. Louis; Wm. J. Studt, St. Louis.

The Public Health Committee of the House of Representatives is composed of the following: Representatives J. A. Gray, M.D., Watson; C. E. Still, Kirksville; J. B. Moore, Hamilton; W. R. Taylor, Fulton; H. W. Meyers, Boonville; John M. Schermann, Hermann; Frank Benanti, Kansas City; Thomas J. Gill, Kansas City; Ralph Erdwin, Concordia; R. Wilson Barrow, Macon; John S. Sample, Jewett; John H. Wilkinson, Newton; Fred A. Neel, Huntsville; Mrs. Mabel Aeschliman, Lancaster; Morris E. Osburn, Shelbyville; Walter S. Clark, Milan; Theodore W. Hukriede, Warrenton; Elbert J. Lee, M.D., St. Louis; Frank Mashak, St. Louis.

FEDERAL

A brief analysis of some of the measures of medical interest introduced in the Seventy-eighth Congress follows:

Chiropractors and the United States Employees' Compensation Act.—S.345, introduced by Senator Murdock,

Utah, for himself and Senator Gillette, Iowa, and H.R.786, introduced by Representative Tolan, California, and pending respectively in the Senate Committee on Education and Labor and the House Committee on the Judiciary. Companion bills to amend Section 40 of the United States Employees' Compensation Act.

Comment.—These bills, in effect, propose to permit chiropractors to treat the beneficiaries of the United States Employees' Compensation Act. The Senate bill, S.345, as originally printed, stated on its face that it had been referred to the Senate Committee on the Judiciary. Subsequently, however, it was apparently referred to the Senate Committee on Education and Labor.

Federal Medical Academies.—H.R.691, introduced by Representative Dickstein, New York, and pending in the House Committee on Military Affairs. A bill for the creation of medical academies.

Comment.—This bill provides for the creation in each corps area of the United States a medical training school for the instruction of physicians for the armed forces and the United States Public Health Service. Each training school will have a minimum of 295 students to be selected by members of Congress. Candidates for admission must be at least twenty years of age and not over twenty-five years, and must be graduates of a college or university or possess the qualifications for entrance into a medical school in the State of which they are residents, must be citizens of the United States and of good moral character. The course of study to be given in such academies will be such as prescribed for the study of medicine by the American Medical Association and will include the subjects of anatomy, physiology, chemistry, hygiene, surgery, obstetrics and gynecology, pathology, bacteriology, and diagnosis.

On satisfactory completion of the course, candidates will be commissioned in the Army or Navy or in the United States Public Health Service, or any other service which may require their services. They must continue in such service for at least ten years, unless the Secretary of War or the Secretary of the Navy, or the Surgeon General of the United States Public Health Service, as the case may be, shall certify that there is no further need for their services. The Secretary of War and the Secretary of Navy and the Surgeon General of the United States Public Health Service, the bill provides, must prescribe jointly such rules and regulations as may be necessary from time to time to make effective the provisions of the bill.

Civilian War Benefits.—Bills are pending to provide benefits for civilians who sustain war injuries and for civilian defense workers who are injured while in the performance of duty or who contract a disease proximately caused by the performance of duty.

S.450, introduced by Senator Pepper, Florida, and pending in the Senate Committee on Finance, proposes benefits for the injury, disability, death or enemy detention of civilians. It also provides for the prevention and relief of civilian distress arising out of the present war. Benefits will consist of momentary payments and the supplying of medical services. The Administrator of the Federal Security Agency may supply doctors' and nurses' services, drugs and other medicines, prosthetic and other appliances, hospitalization, and other reasonable services for treatment and care to the extent that he may prescribe in regulations. The actual cost of such benefits may be paid directly or by way of reimbursement to any person entitled to such benefits or may be paid to the person furnishing such benefits. The Administrator may, under such regulations as he may prescribe, use any private facilities or such government facilities as may be available, for the treatment and care of any person entitled to such benefits.

In addition to the benefits to be made available for civilian defense workers, this bill would authorize benefits to any civilian suffering a personal injury

proximately resulting from a war risk hazard, including any disease proximately resulting from such personal injury. A "war-risk hazard" is defined to mean (1) the discharge of any missile (including liquids and gas) or the use of any weapon, explosive, or other noxious thing by an enemy or in combating an attack or an imagined attack by an enemy; (2) action of the enemy, including rebellion or insurrection against the United States or any of its allies; (3) the discharge or explosion of munitions intended for use in connection with the national war effort, except with respect to any employee of a manufacturer or processor of munitions during the manufacture, or processing thereof, or while stored on the premises of the manufacturer or processor; (4) the collision of vessels in convoy or the operation of vessels or aircraft without running lights or without other customary peacetime aids to navigation; or (5) the operation of vessels or aircraft in a zone of hostilities or engaged in war activities.

S.281, introduced by Senator Green, Rhode Island, and pending in the Senate Committee on Finance, is a bill to amend and extend the provisions of the Social Security Act. It will extend the coverage of old age and survivors' insurance, will provide insurance benefits for workers permanently and totally disabled, will provide hospitalization benefits, special federal aid to States for public assistance and will effect many other changes in the provisions of the existing law.

H.R.317, introduced by Representative Fitzpatrick, New York, and pending in the House Committee on Ways and Means, proposes to amend the Social Security Act so as to provide for the payment of benefits to individuals who are permanently and totally disabled. This bill apparently proposes only momentary benefits.

H.R.370, introduced by Representative Myers, Pennsylvania, and pending in the House Committee on Ways and Means, proposes to extend the federal old age benefit provisions of the Social Security Act to male or female registered, graduate, undergraduate or practical nurses in respect of their employment outside of religious, charitable, and other nonprofit institutions.

H.R.492, introduced by Representative Angell, Oregon, H.R.788, introduced by Representative Tolan, California, and H.R.1286, introduced by Representative Izac, California, all pending in the House Committee on Ways and Means, propose benefits for persons physically disabled to such a degree that they are unable to engage in a gainful occupation.

H.R.867, introduced by Representative Knutson, Minnesota, and pending in the House Committee on Ways and Means, proposes to exempt from the Social Security Act associations furnishing medical care or hospitalization to members or their dependents, if no part of the net earnings of the association inures to the benefit of any private shareholder or individual and if 75 per cent or more of the income consists of amounts collected from members or contributed by the employer for the sole purpose of making such payments and meeting expenses.

H.R.868, introduced by Representative Knutson, Minnesota, and pending in the House Committee on Ways and Means, would add a new title to the Social Security Act providing grants to States for aid to the physically handicapped. A federal appropriation of \$10,000,000 for the first fiscal year of the operation of the proposal would be authorized and for each fiscal year thereafter such sum as is necessary to carry out the purposes of the law.

H.R.375 and H.R.376, introduced by Representative Voorhis, California, and pending in the House Committee on Ways and Means, proposes to amend the Social Security Act so as to confer on each State the exclusive right to adopt its own interpretation of the phrases "needy individuals who are blind," and "blind individuals who are needy," as used in the Act. The purpose of this proposal is to encourage the States to make more adequate provision for blind persons.

THE PHYSICIAN'S FEDERAL INCOME TAX—1943

Prepared by the Bureau of Legal Medicine and Legislation, American Medical Association.

The Revenue Act of 1942 has been correctly described as the greatest revenue raising measure in the history of our country and finds its justification in the tremendous needs of our war program, needs having to do with the actual expenditures for war purposes plus needs in relation to inflation potentialities. The act not only will spiral the tax burden of prior taxpayers but will bring into the income tax picture many millions of persons whose low income has heretofore constituted exempt income. Already plans are under way for additional legislation to raise still more revenue, and the tax burden may reasonably be expected to assume even greater proportions.

During the time when the new act was being formulated by congressional committees and when it was being discussed first in the House and in the Senate, advocates of the so-called Ruml pay-as-you-go plan for the payment of individual income taxes persistently suggested the undesirability of a continuation of the existing practice of taxing during a succeeding year the income received by an individual during a preceding year. There has recently been renewed interest in this plan, and the possibility is not remote that a changed policy may be adopted in the reasonably near future, perhaps by March 15. The President, the Treasury Department and leaders in the Congress have openly espoused the theory of the pay-as-you-go plan, and this espousal has given rise to some doubt on the part of taxpayers concerning the filing of returns this year. The doubt has been apparently so widespread as to call for a public statement by the chairman of the House Committee on Ways and Means, the committee that will initiate any change in our tax procedures, advising taxpayers that a return must be filed on or before March 15 and that that return must be based on the provisions of the 1942 Revenue Act. Despite the uncertainties of the future as to the pay-as-you-go matter, therefore, it is essential that the broad requirements of the new act be fully understood by federal income tax payers.

The Revenue Act of 1942 reduces the personal exemptions of single persons from \$750 to \$500 and of married persons or heads of families from \$1,500 to \$1,200. It reduces the credit for dependents from \$400 to \$350. An additional exemption is allowed members of the armed forces below the grade of commissioned officers. If a serviceman is single, then the first \$250 of the service pay he received during 1942 is exempt. If he is married or the head of a family, then the first \$300 is exempt. The determination of a taxpayer's status in the armed forces and his family status will be made as of the end of the taxable year for the purpose of this particular exemption.

The basic rate of taxation is increased from 4 per cent to 6 per cent. The surtax rate is elevated from 6 per cent on the first \$2,000 of surtax net income to 13 per cent, with a constant increase in rates for incomes in the higher brackets. The earned income credit of 10 per cent remains as heretofore. This credit may be claimed in connection with the normal tax but not with the surtax.

The act continues the provision for a simplified tax schedule for use by taxpayers having gross incomes of \$3,000 or less, derived wholly from salaries, wages or other forms of compensation for personal services, dividends, interest, rents, annuities or royalties. The use of the simplified form remains optional. If the taxpayer has no deductions, it will, generally speaking, be to his advantage to use this form. If he has deductions he should tentatively figure the tax under both the regular method and the optional method and use whichever method happens to be to his advantage.

Returns under the new act need not be made under oath, as has been the requirement heretofore. This will relieve taxpayers of the petty annoyance of having their returns sworn to before a notary public or some other official authorized to administer oaths. The taxpayer, however, who falsifies a return will be subject to heavy penalties even though he is not required to execute the return under oath.

WHO MUST FILE RETURNS

In General.—1. Returns must be filed by every unmarried person and by every married person not living with spouse, if gross income during 1942 was \$500 or more.

2. Returns must be filed by every married person who lived with spouse, if gross income during 1942 was \$1,200 or over. If both husband and wife had income and their combined gross income was \$1,200 or over, they must either file separate returns or, if both are citizens or residents of the United States and if they were living together at the end of the taxable year, they must file a joint return. If a person was married and lived with spouse for only part of 1942, special rules apply with respect to the filing of returns, and physicians who come within this classification should read carefully the instructions given on the tax return blanks.

If the status of a taxpayer, so far as it affects the personal exemption or credit for dependents, changed during the year, the personal exemption and credit must be apportioned, under rules and regulations prescribed by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury, in accordance with the number of months before and after such change. For the purpose of such apportionment a fractional part of a month should be disregarded unless it amounts to more than half a month, in which case it is to be considered as a month.

Physicians in Military or Naval Service.—The fact that a physician may be in service does not of itself excuse a failure to file a return, for the income tax act applies to persons in service as well as to persons engaged in civilian activities. Physicians who have gone into service, therefore, should if at all possible file complete returns before the deadline. While, unfortunately, definite regulations have not been issued to cover the situation, it is understood that, if because of the inaccessibility of necessary records a physician in service is unable to file a complete return, he may file a tentative return on which he must estimate his income, deductions and tax as best he can and indicate on the return his reasons for following this procedure. He will be required at a later date to file a complete return, and necessary adjustments in the tax will be made.

If a physician in service is on duty outside the United States no income tax return or payment of any income tax will become due, generally speaking, until the fifteenth day of the third month following the month in which the physician ceases (except by reason of death or incompetency) to be a member of the military forces on sea duty or in service outside the continental United States, or the fifteenth day of the third month following the month in which the present war is terminated as proclaimed by the President, whichever may be the earlier.

GROSS AND NET INCOMES: WHAT THEY ARE

Gross Income.—A physician's gross income is the total amount of money received by him during the year for professional services, regardless of the time when the services were rendered for which the money was paid, assuming that the return is made on a cash receipts and disbursement basis, plus such money as he has received as profits from investments and speculation and as compensation and profits from other sources.

If a physician receives a salary as compensation for

services rendered and in addition thereto living quarters or meals, the value to the physician of the quarters and meals so furnished ordinarily constitutes income subject to tax. If, however, living quarters or meals are furnished for the convenience of the employer, the value thereof need not be computed and added to the compensation otherwise received by the physician. As a general rule, the test of "convenience of the employer" is satisfied if living quarters or meals are furnished to a physician who is required to accept such quarters and meals in order to perform properly his duties. For example, if a physician employed by a hospital is subject to immediate service at any time during the twenty-four hours of the day and therefore cannot obtain quarters or meals elsewhere without material interference with his duties and on that account is required by the hospital to accept the quarters or meals furnished by it, the value thereof need not be included in the gross income of the physician.

Net Income.—Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged for gain may be subtracted as "deductions" from the gross income, to determine the net income on which the tax is to be paid. An "exemption" is allowed, the amount depending on the taxpayer's marital status during the tax year as stated before. These matters are fully covered in the instructions on the tax return blanks.

Earned Income.—In computing the normal tax, but not the surtax, there may be subtracted from net income from all sources an amount equal to 10 per cent of the earned net income, except that the amount so subtracted shall in no case exceed 10 per cent of the net income from all sources. Earned income means professional fees, salaries and wages received as compensation for personal services, as distinguished from receipts from other sources.

The first \$3,000 of a physician's net income from all sources may be regarded under the law as earned net income, whether it was or was not in fact earned within the meaning set forth in the preceding paragraph. Net income in excess of \$3,000 may not be claimed as earned unless it in fact comes within that category. No physician may claim as earned net income any income in excess of \$14,000.

PHYSICIANS IN MILITARY OR NAVAL SERVICE

As previously pointed out, physicians in service are as much subject to the income tax law as are physicians engaged in civilian practice. The service pay of such physicians must be reported as income. Commutation of quarters and rental value of quarters occupied by medical officers, however, are not taxable income.

If the ability of physicians in service to pay income taxes is materially affected by such service, payment of the tax falling due before or during the service may be deferred for a period extending not more than six months after termination of service. This deferment is authorized by section 513 of the Soldiers' and Sailors' Civil Relief Act of 1940 and applies to all members of the Army, Navy, Marine Corps and Coast Guard, and to all officers of the United States Public Health Service detailed by proper authority for duty either with the Army or Navy, on active duty or undergoing training or education under the supervision of the United States preliminary to induction into service. This does not apply to the tax imposed on employers by section 1400 of the Federal Insurance Contributions Act. This deferment is not automatic. The taxpayer must present evidence to show that his ability to pay the tax is materially impaired by reason of military service. Proof of that impairment should be submitted at the time the tax is due, on a form procurable from the offices of the collectors of internal revenue. A copy of the form was reproduced in the Feb. 28, 1942, issue of *The Journal of the American Medical Association* on page 737.

THE VICTORY TAX

The physician need give no consideration to the new 5 per cent Victory tax in making his return on or before March 15. As explained in *The Journal*, Dec. 5, 1942, this tax does not apply to income received during 1942, although physicians who are classifiable as employees will periodically have the tax withheld from their salaries during 1943.

TAXATION OF ACCOUNTS RECEIVABLE

The Revenue Act of 1942 remedies an unjust method of taxation that has heretofore prevailed in connection with the unpaid accounts on the books of a taxpayer at the time of his death. Under prior law, for the year of death, the value of such accounts has been included as income and subject to the income tax rates, even though the taxpayer actually received no income at all therefrom. Hereafter the value of the unpaid accounts will not be considered as a part of the income of the decedent for the year of death but will be taxable when paid, as a part of the income of the person receiving the money. A detailed discussion of this matter was published in *The Journal*, Jan. 10, 1942, page 149.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The taxpayer should make no claim for the deduction of expenses unless he is prepared to prove the expenditure by competent evidence. So far as practicable, accurate itemized records should be kept of expenses and substantiating evidence should be carefully preserved. The following statement shows what such deductible expenses are and how they are to be computed:

Office Rent.—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in such dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense; to entitle him to such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

Office Maintenance.—Expenditures for office maintenance, as for heating, lighting, telephone service and the services of attendants are deductible.

Supplies.—Payment for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies and the subscription price deducted. Amounts currently expended for books, furniture and professional instruments and equipment, "the useful life of which is short," generally less than one year, may be deducted; but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

Equipment.—Equipment comprises property of a more or less permanent nature. It may ultimately wear out, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using."

The cost of equipment such as has been described, for professional use, cannot be deducted as expense in the year acquired. Examples of this class of property are automobiles, office furniture, medical, surgical and laboratory equipment of more or less permanent nature, and instruments and appliances constituting a part of the physician's professional outfit, to be used over a considerable period of time, generally over one year. Books of more or less permanent nature are regarded

as equipment and the purchase price is therefore not deductible.

Although the cost of such equipment is not deductible in the year acquired, nevertheless it may be recovered through depreciation deductions taken year by year over its useful life, as described later.

No hard and fast rule can be laid down as to what part of the cost of equipment is deductible each year as depreciation. The amount depends to some extent on the nature of the property and on the extent and character of its use. The length of its useful life should be the primary consideration. The most that can be done is to suggest certain average or normal rates of depreciation for each of several classes of articles and to leave to the taxpayer the modification of the suggested rates as the circumstances of his particular case may dictate. As fair, normal or average rates of depreciation, the following have been suggested: automobiles, 25 per cent a year; ordinary medical libraries, x-ray equipment, physical therapy equipment, electrical sterilizers, surgical instruments and diagnostic apparatus, 10 per cent a year; office furniture, 5 per cent a year.

The principle governing the determination of all rates of depreciation is that the total amount claimed by the taxpayer as depreciation during the life of the article, plus the salvage value of the article at the end of its useful life, shall not be greater than its purchase price or, if purchased before March 1913, either its fair market value as of that date or its original cost, whichever may be greater. The physician must in good faith use his best judgment and claim only such allowance for depreciation as the facts justify. The estimate of useful life, on which the rate of depreciation is based, should be carefully considered in his individual case.

Medical Dues.—Dues paid to societies of a strictly professional character are deductible. Dues paid to social organizations, even though their membership is limited to physicians, are personal expenses and not deductible.

Postgraduate Study.—The Commissioner of Internal Revenue holds that the expense of postgraduate study is not deductible.

Traveling Expenses.—Traveling expenses, including amounts paid for transportation, meals and lodging, necessarily incurred in professional visits to patients and in attending medical meetings for a professional purpose, are deductible.

Automobiles.—Payment for an automobile is a payment for permanent equipment and is not deductible. The cost of operation and repair, and loss through depreciation, are deductible. The cost of operation and repair includes the cost of gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeurs' wages, and the like.

Deductible loss through depreciation of an automobile is the actual diminution in value resulting from obsolescence and use and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is possessed by the present taxpayer.

If an automobile is used for professional and also for personal purposes—as when used by the physician partly for recreation, or so used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expenses; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood. What has been said in respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

MISCELLANEOUS

Contributions to Charitable Organizations.—For detailed information with respect to the deductibility of charitable contributions generally, physicians should consult the official return blank or obtain information from the collectors of internal revenue or from other reliable sources. A physician may not, however, deduct as a charitable contribution the value of services rendered an organization operated for charitable purposes.

Bad Debts.—Physicians who make their returns on a cash receipts and disbursements basis, as most physicians do, cannot claim deductions for bad debts.

Taxes.—Taxes generally, either federal or state, are deductible by the person on whom they are imposed by law. Both real and personal property taxes are deductible; but so-called taxes, more properly assessments, paid for local benefits, such as street, sidewalk, and other like improvements, imposed because of and measured by some benefit inuring directly to the property against which the assessment is levied, do not constitute an allowable deduction from gross income. Physicians may deduct state gasoline taxes and state sales taxes. In some states sales taxes are imposed on the seller, but, if they are passed on to the buyer, the latter may deduct them.

State income and use taxes are deductible; federal income taxes are not. Among the federal taxes that a physician may deduct are those on admissions, dues, initiation fees, safety deposit boxes, tax on telegraph, telephone, cable and radio messages, and the federal use tax on automobiles. State automobile license fees are deductible. If a state or local fee is imposed for regulatory purposes, and not to raise revenue, the fee may not ordinarily be deducted as a tax. If such fees, however, are classifiable as a business expense, they are deductible as such. Annual registration fees imposed on physicians probably come within the category of regulatory fees and should be deducted as a business expense rather than as taxes. Local and state occupational taxes imposed on physicians are deductible either as taxes or as a business expense, depending on the purpose for which the tax is imposed.

The excise taxes imposed on employers by section 804, title VIII, and section 901, title IX, of the Social Security Act, commonly referred to as old age and unemployment benefit taxes, are deductible annually by employers in computing net income for federal income tax purposes. If the taxpayer's return is made on a cash basis, as are the returns of practically all physicians, the taxes are deductible for the year in which they are actually paid. If the return is made on an accrual basis, the taxes are deductible for the year in which they accrue, irrespective of when they are actually paid. Employees, including physicians whose employment brings them within that category, may not deduct the tax imposed on them by section 801, title VIII, of the Social Security Act, generally referred to as the old age benefits tax. If, however, the employer assumes payment of the employee's tax and does not withhold the amount of the tax from the employee's wages, the amount of the tax so assumed may be deducted by the employer, not as a tax paid but as an ordinary business expense.

Medical Expense.—A taxpayer may deduct amounts expended for medical, dental and hospital care, not compensated for by insurance or otherwise, including amounts paid for accident and health insurance, according to a prescribed formula. Deductions will be permitted to the extent that such expenses exceed 5 per cent of the net income of the taxpayer but not in excess of \$2,500 in case of the head of a family, or \$1,250 in case of other individual taxpayers.

Equipment Necessitated by Military Service.—The cost of equipment of an Army officer to the extent only that it is especially required for his profession and does not merely take the place of articles required in civilian

life is deductible. The cost of a uniform is considered a personal expense and hence not deductible.

Laboratory Expenses.—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Losses by Fire or Other Causes.—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent to which it has not been made good by repair and the cost of repair claimed as a deduction.

Insurance Premiums.—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

Expense in Defending Malpractice Suits.—Expense incurred in the defense of a suit for malpractice is deductible as a business expense.

Sale of Spectacles.—Oculists who furnish spectacles etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from charges for spectacles, etc.

NONTRADE OR NONBUSINESS EXPENSES

A new provision in the Revenue Act of 1942 permits, in the case of an individual, the deduction of all the ordinary, necessary expenses paid or incurred during the taxable year for the production or collection of income, or for the management, conservation or maintenance of property held for the production of income. While the phraseology of this provision is very broad, the Commissioner of Internal Revenue has by regulation ruled that the following expenses, among others, are not deductible under it: Commuters' expenses; expenses of taking special courses of training; expenses in seeking employment or in placing one's self in a position to begin rendering personal services for compensation; bar examination fees and other expenses incurred in securing admission to the bar, and corresponding fees and expenses incurred by physicians, dentists, accountants and other taxpayers for securing the right to practice their respective professions.

MISSOURI AND HER CARDIAC CRIPPLES

PARK J. WHITE, M. D.

ST. LOUIS

What a difference a definition can make to a patient! A Missouri child, whose parents cannot afford to pay for prolonged medical and surgical care, has a paralyzed muscle in his leg, with resulting impairment of function. He is a "cripple," as defined by the law of the state. And this means everything to him in a practical way for the Federal Social Security Act of 1935 provided grants-in-aid to state agencies for the care of the crippled. The federal agency concerned (the Children's Bureau) accepts each state's definition of "cripple" and provides funds for the care of such patients.

Now, consider the plight of another Missouri child with prolonged muscular impairment equally crippling—often more so—but impairment from his point of view of the wrong muscle—the heart. If this "cardiac cripple" lives in one of thirteen states providing for the care of such patients, his outlook will be as bright as his cardiac involvement will permit for he will receive adequate and prolonged medical care.

These thirteen states might be called intelligent enough to consider that children with rheumatic or other heart disease are "in every sense of the word 'crippled,' in that this disease renders achievement unusually difficult for the victims, and makes it necessary for them to have more care than normal children."

In Missouri, the care of crippled children is mainly orthopedic and is administered by the University of Missouri. As in other states, the Missouri members of the Academy of Pediatrics have no quarrel with a program providing orthopedic care. But it is obviously the duty of Missouri pediatricians to urge as strongly as they can that Missouri join the thirteen at present providing aid for children who are "cardiac cripples."

The present difficulty, according to the Attorney General's office, is that the Missouri statute (Section 9649, R. S. Mo., 1939) is not broad enough to include crippling due to heart disease.

Naturally, the pediatricians of Missouri have not been passive with regard to this matter. In June 1942, at the instance of Dr. Hugh Dwyer, Kansas City, state cochairman of the Academy of Pediatrics, the House of Delegates of the Missouri State Medical Association adopted a resolution directing its Committee on Public Policy to petition the State Legislature to amend the statute to include children suffering with heart disease. Such an amendment is now being prepared.

Organized medicine in Missouri should bear in mind that this medico-legislative project has ample backing from authorities throughout the country.

Dr. Edith Terry¹ cites the plan of Dr. Fritz Talbot, of Boston, instituted thirty years ago for the care of children with rheumatic heart disease; hospital care for the acutely ill child; supervision of subsequent bed care at home; provision for amusement; convalescent homes; vocational guidance, and prolonged medical and social service supervision. She gives in detail the present-day working out of Dr. Talbot's plan in Boston.

At the Detroit meeting of the American Public Health Association in 1940, Drs. Betty Huse, of the Children's Bureau, T. Duckett Jones, and Miss Ethel Cohen, of Boston, gave an excellent symposium, outlining what might be called an ideal program for the long-term therapeutic, educational and occupational management of children with rheumatic heart disease. (Reprints may be obtained from the Children's Bureau, Department of Labor, Washington, D. C.) From this, the need of state and federal aid is obvious. Finally, the Children's Bureau—ever a pediatric tower of strength in these days—has prepared a brochure, also available to those interested, entitled "State Programs for Care of Children with Heart Disease." (1941).

Thus it is clear that the influence of the physicians of Missouri should be put behind the efforts of the pediatricians to keep Missouri abreast of the times in its care of a large group of crippled children sadly in need of proper medical management.

1. Terry, Edith M.: A. Medical Social Program for the Child with Rheumatic Fever, *New England J. Med.* 224: 632 (April 10) 1941.

AMERICAN MADE ATABRINE IS AS GOOD AS THAT MADE IN OTHER COUNTRIES

American made Atabrine, a substitute for quinine in the treatment of malaria, is as good as that made in any other country. *The Journal of the American Medical Association* declares in its November 14 issue.

CORRESPONDENCE

CAPT. ANDREW H. PANETTIERE, M. C.

HEADQUARTERS
SERVICE COMMAND

17 December 1942

Secretary,
Missouri State Medical Society,
Care of American Medical Association,
Chicago,
Illinois.

Dear Sir:

I am sending you a copy of the enclosed letter, addressed to the American Medical Association, together with a copy of General Order Number 5, because, I believe, Captain Panettiere's friends and colleagues in the Missouri State Medical Society, who now mourn him, will find inspiration in knowing the circumstances of his death.

Very sincerely yours,

R. E. S. WILLIAMSON,
Brigadier General, USA,
Commanding

HEADQUARTERS
SERVICE COMMAND

APO No. 502

14 December, 1942

GENERAL ORDER)
NUMBER)

1. When the first units of the United States Army arrived in Noumea, New Caledonia, in March 1942, the French authorities made the facilities of the Orphanage available to the Medical Corps as the site for a hospital. Since that time the hospital has been operated by personnel from various medical units, and has rendered service to French as well as other civilians, to distressed seamen, and to members of the armed forces of the United States. The hospital has operated under various designations, but has usually been referred to as the American Hospital or the Army Hospital.

2. Captain Andrew H. Panettiere, Medical Corps, came to New Caledonia with one of the earlier Army organizations. When that organization moved from New Caledonia to the Solomon Islands, it was the first Army unit to enter on joint operations with the Navy and Marine Corps in the South Pacific area. Captain Panettiere went to Guadalcanal with his organization and was killed in action on 23 November, 1942. He was the first medical officer with an organization of the United States Army to give his life in the fight for the Solomon Islands.

3. Captain Panettiere was born in Sicily, 14 February, 1909, but was educated in the United States. He received the degree of Doctor of Medicine from Creighton Medical School in June, 1935, and took his internship at St. Mary's Hospital, Kansas City, Missouri. He then became a resident in psychiatry at Missouri State Hospital in St. Joseph, for three years, and was a member of the American Medical Association, the Missouri-Kansas Neuropsychiatric Association, Medical Corps, in the Officers Reserve Corps 10 July, 1937, and reappointed in the same grade in the National Guard, 21 July, 1939. He was placed on extended active duty on 23 December, 1940, at Camp Joseph T. Robinson and was a student at the Medical Field Service School, Carlisle, during May, 1941. Captain Panettiere was promoted to his present grade on 1 August, 1941, and was assigned as Battalion Surgeon in March, 1942, shortly before leaving on foreign service.

4. The following tribute is rendered in a hurried entry in the Morning Report of the Medical Detachment of his unit under date of 23 November, 1942:

"Capt. Andrew Panettiere was killed by mortar in Bn Aid Sta. Another great loss to the Det."

5. In acknowledgment of and appreciation for his courageous service, and in behalf of those Forces of which he was a part, the Army Hospital at Noumea, New Caledonia, is hereby designated "Panettiere Hospital."

By command of Brigadier General WILLIAMSON:

JOHN H. ALLEN
Colonel, F. A.,
Executive Officer.

OFFICIAL:
HERBERT S. KAMSLER,
Major, A. G. D.,
Adjutant General.
DISTRIBUTION "A"

BOOK REVIEWS

NEW AND NONOFFICIAL REMEDIES, 1942. Containing Descriptions of the Articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1942. Issued under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association, Austin E. Smith, M.D., C.M., M.Sc., Editor. American Medical Association, Chicago.

Perhaps the most important feature of this new volume of *New and Nonofficial Remedies* is the radical rearrangement it has undergone which, it is believed, will make the contents more accessible and therefore more valuable to the physician or other interested reader. Heretofore, the classification of products has been basically that of chemical relationship. The new arrangement is primarily according to therapeutic use, chemical classification being introduced by means of subheadings. In addition, the typographic style has been changed so as to give greater prominence to the products of individual manufacturers. No valuable feature has been sacrificed. The book still fulfills its function of establishing chemical standards for new and nonofficial preparations which the Council has found to be useful or to give adequate promise of usefulness in the treatment or prevention of disease. Its function as a guide to the most recent advances in therapeutics has been greatly enhanced.

Careful examination of the general discussions under the various headings and subheadings shows that the Council has performed admirably its annual task of keeping the text abreast with the progress of medicine. The authoritative and compendious section of the sulfonamide derivatives is an outstanding example. So also is the chapter, "Vitamins and Vitamin Preparations for Prophylactic and Therapeutic Use." Equally important although less extensive revisions have been made in such sections as, Aluminum Compounds, Dextrose, Gonadotropic Substances, Liver and Stomach Preparations, Ovaries, Parathyroid, Pituitary, and Testes.

Among the newly accepted drugs are: Acetyl-Beta-Methylcholine and the proprietary brand, Mecholyl Chloride, proposed for use by iontophoresis, orally and subcutaneously as a parasympathetic stimulant; Adrenal Cortex Extract for parenteral use in the treatment of Addison's disease or of adrenal insufficiency of other types as well as prophylactically in surgical procedures involving the adrenal cortex; Aluminum Hydroxide Gel with the proprietary brand, Creamalin, for oral use as an adjunct in the treatment of peptic (gastric and duodenal) ulcer; and Normal Human Serum and Normal Human Plasma.

Others worthy of mention are: Cyclopropane, another general anesthetic, now included in the U.S.P.; Amylcaine Hydrochloride, another proprietary local

anesthetic and Pernoston Sodium, the sodium salt of the previously accepted proprietary barbital derivative, Pernoston.

The indices of the new volume of *New and Nonofficial Remedies* are of the same order and plan as in previous editions. A general index lists accepted articles including those not described. This is followed by an index to distributors in which appear all the Council accepted articles listed under their respective manufacturers. Finally, a bibliographic index is added for listing proprietary and unofficial articles not included in N.N.R. This includes references to the Council publications concerning each such article as has appeared in *The Journal of the American Medical Association*, Reports of the Council on Pharmacy and Chemistry, Propaganda for Reform, Vol. 1 and 2, or Reports of the A.M.A. Chemical Laboratory.

WHEN DOCTORS ARE RATIONED. By Dwight Anderson, Director Public Relations, Medical Society of the State of New York, and Margaret Baylous, Therapist, Charleston General Hospital, Charleston, West Virginia. New York: Coward-McCann, Inc. 1942. Price \$2.00.

This is a timely book for professional and lay reading. Dr. Van Etten has provided a foreword that is practically an abstract of the book itself. The book is full of good counsel to the laity upon the public relations of medicine. It is the kind of public relations book that should be read by the laity but is rarely purchased by them. Far the greater portion of the book is devoted to topics other than the rationing of physicians. It could serve as a series of broadcasts upon any health and happiness program of a medical society. Chapter by chapter one finds the authentic information upon the standards and ethics of good medical practice exposed. The book offers no scheme of planning for the distribution of physicians or of medical service. But it does detail the basic demands of good medical practice upon which successful planning should be established.

E. H. S.

DOCTOR BARD OF HYDE PARK. By John Brett Langstaff. New York: E. P. Dutton and Company, Inc. 1942.

This is a book by a verstaile minister about a versatile physician. The subject of the biography is the great physician of revolutionary times who once, as an incident in the day's work, saved George Washington's life. Doctor Samuel Bard obviously gave the father of this country no more and no less skilful attention than he gave thousands of other patients in the course of his thirty-five years of practice. With true medical impartiality, he made his therapeutic sun to rise on the evil and on the good, so successfully, in fact, that one is amazed at his ability to remain neutral even throughout the war of the rebellion. Dr. Langstaff of course makes this clear as he shows how firm were Doctor Bard's attachments to Edinburgh and London, where he acquired the best medical education attainable at the time.

Theses for Ph.D. degrees have been written on the manners of gentlemen in the eighteenth century. Into such manners the writer of this truly excellent biography naturally ran head on. Doctor Samuel Bard's remarkable father, Doctor John, himself a tower of strength was determined that young Sam should "acquire the character of an easy, well-bred gentleman." This meant, in part at least, the development of that innate variety of cultural interests which old Dr. John knew a true son of his inevitably must possess.

No biographer could have had better training in the appreciation of many-facetted medical gems than the Reverend Dr. Langstaff, who in his younger days spent many months in intimate association with Sir William Osler, to whose memory the volume is dedicated. The likeness of Bard to Osler was and is striking. Languages,

literature, art, botany—plus intimate and as thorough knowledge of medicine itself as the times afforded—*ecce homo!* Behold the man—the complete man. Pathetically modern physicians may be pardoned for crying, "Where did such a man find the time?" Overwhelmed as physicians are by electrocardiograms, metabolism tests, blood chemistry, ever-ringing telephones, what chance have they to be medical gentlemen like Bard and Osler?

Well, the superabundant life was ever difficult of attainment—not to mention survival. Only the few can be sensitive recipients and donors both. But good intentions and honest following after can be anyone's for the asking. So the lesser lights may follow the gleam of such as Samuel Bard, with gratitude that so kindly a light has been set before them.

Finally and specifically, what manner of man was Bard? Honesty and industry, the two cardinal medical virtues, he possessed abundantly and cultivated assiduously. As a medical student in 1764 he experimented with opium, changed his notion that opium was a stimulant and concluded that it was a sedative. That thesis, in Latin, was much quoted and brought him early fame, as did also his manifold and thorough botanical investigations. Back in America, the quick recognition of his talents and training—diminishing for a while because of his refusal to "take sides" politically; his founding of and for some time presiding over the New York Hospital, the Columbia College of Physicians and Surgeons, the New York State and Dutchess County Medical Societies—might not these be considered enough? Perhaps; but Samuel Bard was several other men too. He sloughed off the cares of practice at 56 (excellent idea!) Ever a devoted family man, he made his ancestral estate at Hyde Park near Poughkeepsie. Here he wrote excellent works on obstetrics (several editions of this were quickly published); botany; finally, "A Guide for Young Shepherds," with instructions for feeding sheep and for diagnosing and treating their diseases. He built the Episcopal Church at Hyde Park—but the reviewer must call a halt.

I cannot close without a word of special commendation for the cleric and former hospital chaplain who wrote the biography. Bard was a deeply religious physician (again, like Osler.) He met the clergy with whom his educational work constantly threw him on at least even terms. Dr. Langstaff treats this aspect of his subject with a restraint which seems almost more than proper.

To those who feel that they might be interested in one of the greatest and wisest pioneers of American medicine, I say, buy or beg and read this book. P. J. W.

OPHTHALMOLOGY AND OTOLARYNGOLOGY. Prepared and Edited by the Subcommittees on Ophthalmology and Otolaryngology of the Committee on Surgery of the Division of Medical Sciences of the National Research Council. Illustrated. Philadelphia and London: W. B. Saunders Company. 1942. Price \$4.00.

This volume is one of a series which places in reach of the general practitioner who has been called to service essential knowledge of the various specialties. The condensed form and avoidance of debatable points make it a convenient quick reference book. Both sections have been ably written by well known authorities and a great fund of information is contained in this small volume. R. L. B.

MENTAL ILLNESS: A GUIDE FOR THE FAMILY. By Edith M. Stern with the collaboration of Samuel W. Hamilton, M.D. New York: The Commonwealth Fund. 1942. Price \$1.00.

This brief work is intended to serve as a guide for members of a family of which one is a patient in an institution. The brevity of the treatment precludes any thing more than outline form. L. B. A.

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FACTORS OF RECOGNITION AND TREATMENT OF EARLY DEGENERATIVE HEART DISEASE

WM. B. KOUNTZ, M.D.

ST. LOUIS

The experience of most physicians of patients dying with heart disease when nothing has been found on previous examination emphasizes the importance of understanding early degenerative heart changes. Since physical examination usually reveals little, according to White,¹ it is necessary for all patients to be studied in considerable detail, especially from the standpoint of clinical symptoms and from the standpoint of the laboratory if one is to recognize early disease.

As its name implies, degenerative heart disease occurs in individuals whose phase of life is on the decline. It is to be remembered that there are other factors besides heart disease that are wrong with the patient's physiology. The degenerative processes which lead to the fundamental change in the physiology of the individual may give a symptom complex which attracts more attention than the heart disease. In other instances, the fundamental degenerative change may be of such a character as to nullify or deaden the individual to symptoms which arise from his internal organs.

It must be remembered further that all symptoms, whether cardiac or not, depend on two primary mechanisms; namely, stimulation of the sensory nerves and the sensitiveness of the nervous system.² In the diagnosis, the response to different symptoms must be recognized. The operation of factors which cause symptoms constantly varies in the same individual. A relatively insensitive nervous system may give rise to no symptoms when there is apparent cause for a considerable stimulation, while a sensitive nervous system may produce symptoms with little cause for stimulation. Fatigue or disease may lower the threshold of both mechanisms of the nervous system and symptoms may not be produced

by severe stimulations. On the other hand, rest or disordered function may raise the threshold of a less sensitive nervous system so that symptoms appear much sooner than they have at any previous time. Therefore, in the estimation of disease in individuals with degenerative changes whose general constitution is not up to par, it is extremely important to consider the influence of other systems which have a bearing on the production of symptoms.

It is understood generally that all symptoms do not mean disease. One may see an individual who complains of precordial distress but complete examination may indicate that the patient does not have any form of heart disease. However, in another patient, advanced disease may be present with the same complaint. An example is that of an arrhythmia of a heart in which no definite structural pathologic condition can be demonstrated. Occasionally one may find in individuals, especially those who are older, serious heart disease with such an arrhythmia. A mistake frequently made by clinicians is to pay too little attention to minor symptoms in patients after middle life. These physicians, thinking in terms of younger individuals perhaps, fail to realize that observation of small changes is important and significant in older people. They, therefore, fail to recognize underlying disease processes.

As degeneration develops in individuals, certain basic changes occur in their vascular physiology. Their sympathetic as well as their central nervous system becomes less responsive to external stimuli and the vasomotor action less vigorous. The heart muscle adapts itself more slowly to physiologic changes. Upon exercise the cardiac output slowly increases whereas, in youth, the increase is rapid. The heart rate likewise responds to a lesser extent. Readjustment to normal also takes place slowly and a greater period is required for it to occur than in individuals who show no signs of degeneration. The cardiac response to drugs also is affected in elderly people and not only does one find a delayed immediate reaction to drug substances but also a much more prolonged effect. These atypical responses are not due to different

¹From the Washington University School of Medicine, Department of Internal Medicine.

²Presented at the 85th Annual Session of the Missouri State Medical Association, Kansas City, April 27, 28, 29, 1942.

action of the stimuli but rather to an unstable response of the neurovascular system. The clinical viewpoint, therefore, must be modified to approach that of the physiologist who feels that degeneration of any system begins as a disordered function and does not necessarily imply a pathologic condition. The clinical physiologist³ long has maintained that clinicians are too much concerned with the pathology and not enough with functional aspects of tissue. They have pointed out that functional conditions may produce pathologic changes in conditions in which disease was not apparent. Paroxysmal auricular tachycardia, which is quite a benign condition in itself, is an example of such. However, if it is permitted to exhaust the heart, cardiac dilatation with heart failure and death may occur.

Clinical Symptoms.—Such conditions as dyspnea, palpitation and precordial pain, all of which commonly occur in advanced heart disease, will not be emphasized in this study of clinical symptoms. However, such relatively unimportant symptoms as physical exhaustion, nervousness, insomnia, dizziness, cough, fainting, syncope, anorexia and pain in the legs are usually present in early cardiac weakness. These occur before the advanced state is reached. Special attention should be paid to pain in the extremities in the early diagnosis of heart disease since this establishes the fact that faulty blood supply to the peripheral muscles has developed. Physical weakness is also an important sign of early heart disease. Nervousness associated with insomnia is an extremely early symptom. Headache, dizziness and loss of appetite are of considerable significance. It is important when taking the clinical history to consider particularly the initial symptom because this is the foundation stone upon which the diagnosis rests. Attention also should be paid to the trend of the symptom complex or the evolution and order of appearance of symptoms.

Physical Signs.—There are some physical signs in early degenerative heart disease. These are chiefly variation in the heart sounds, frequently described in the literature by such ambiguous terms as "impure or weak heart sounds." As far as the stethoscope is concerned, only an impression of disordered heart function may be gained. More detailed analytical studies must be resorted to for interpretation. Occasional murmurs and other extraneous sounds may develop. One must rely on the laboratory tests such as the teleoroentgenogram, electrocardiogram, the vibrocardiogram and kymogram.

Teleoroentgenograph is an important instrument used in the procedure of establishing changes in the size and shape of the heart. The use of this diagnostic aid has done much to orient physicians to the different types of heart disease. Physicians have learned to associate the boot-shaped heart and the enlarged pulmonary conus with rheumatic heart disease, the pear-shaped heart with pericardial effusion and generalized enlargement of the heart with hypertension. It also has a

definite value in picking up small degrees of enlargement in early heart disease. Change in the size of the aorta as recorded by the roentgen ray is of some importance in the evaluation of heart disease. Dilatation of this blood vessel is an index to the state of the coronary arteries. All individuals in these studies who have had acute coronary occlusion had dilatation of the aorta before the accident.

The fluoroscope is a valuable aid in the establishment of heart disease. It does not give detail but helps to establish functional inactivity. One not only notes the variation in size of the heart but also its contractility and the relative size of the large blood vessels in the chest.

The electrocardiograph, an instrument that records changes in the electric potential of the heart, is of inestimable value in the diagnosis of acute coronary occlusion or advanced myocarditis. However, in instances of early myocardial disease, the changes in the electrocardiogram may be so insignificant as to cause one to hesitate to make a diagnosis of disease. Slurring of the QRS complexes and elevation or depression of the ST segment may be found in early degeneration of the heart muscle.

The kymogram⁴ is a diagnostic technic to which too little attention has been paid. It is a roentgen ray film exposed through a grill. During the exposure the film moves downward, thereby recording the movement of the heart shadow. Thus the systolic and diastolic outline may be noted. The contractility of the heart is recorded by means of crests and troughs. The crest represents the diastolic period and the trough the systolic period. At times the crests and troughs may be absent in one area indicating that the area is not functioning well due to damage of a blood vessel. In addition, there may be a general reduction of the troughs and crests when general myocardial disease is present. Changes in upper and lower borders of the crests are also of significance.

A new instrument which gives promise as an aid in the diagnosis of disordered function of the heart is the vibrocardiograph.⁵ The instrument records all cardiac vibrations and thus gives a clue under proper circumstances to heart muscle weakness.

The treatment of heart disease in its early stages must be directed to the treatment of the general underlying cause of degeneration. Such things as vitamin deficiency, as has been pointed out by Weiss,⁶ should be sought out and dietary factors remedied. Mild hypo-insulinism, which does not reach the proportion of diabetes, should receive definite attention through diet or the administration of small doses of protamine zinc insulin.

Hypothyroidism is a factor which frequently leads to acute vascular disease because of its tendency to cause degeneration of the smooth and cardiac muscle. A low metabolism in hypothyroid function should be corrected.

Anemia likewise is believed to influence the activity of cardiac muscle. Attention frequently has

been called to muscle degeneration in long-standing anemia. Such things as low hemoglobin and low red cell count should warrant definite attention.

Foci of infection should be sought for and removed. Two common points of infection to be considered are the teeth and the urinary system. Discontinuing smoking and limiting alcohol intake can not be overemphasized.

Observations have been made that individuals past middle life whose diets are relatively low in fat remain in better general health than do those whose diets are high in fat. Increase in cholesterol content of blood and occasionally increased blood sugar may be benefited by a diet low in such foods as butter, cream, cheese and eggs.

SUMMARY

One may say that the studies at the St. Louis City Infirmary produced evidence that one may recognize early degeneration of the body functions and associated heart disease. Effort to control the degeneration modifies the incidence and course of heart and vascular disease. Correction of such conditions as foci of infection, nutritional status of the individual, deficiency of the blood, modification of the metabolism of the body and the limitation of abuses, such as excessive smoking, are factors in the control of these conditions.

415 Lister Building.

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Despite unsubstantiated claims to the contrary, methods of correcting color blindness are unknown. *The Journal of the American Medical Association* for March 20 warns. *The Journal* says:

"Newspaper publicity given recently to an alleged cure for color blindness seems to emanate from one J. H. Lepper, optometrist, of Mason City, Iowa. In reply to inquiries concerning his procedure for correcting color blindness, a form letter is sent in which it is stated 'YES, YOUR CASE OF COLOR BLINDNESS CAN BE CORRECTED. IF WE DO NOT, IT WILL BE THE FIRST CASE.' The statement also suggests that cases take from two to three weeks for correction. If the patient comes to Mason City, \$5 a day is charged. If the prospect finds it impossible to come to Mason City, Lepper says he can send the same equipment, involving two pairs of special colored glasses and one color vision test book, for a total of \$25. A lamp with a reflector and a 60 watt bulb and a flasher if obtainable are also required for home treatment. The form letter is accompanied by a list of testimonials, none of them signed by the writer's full name. Color blindness is a congenital defect. Despite unsubstantiated claims to the contrary, methods of correcting this condition are unknown. Many letters sent to the headquarters of the American Medical Association indicate that men who have had difficulty in gaining entrance to the navy or the air force have been given false hopes by this wholly unwarranted publicity for an unestablished procedure."

MAPHARSEN IN SYPHILIS COMPLICATED BY PREGNANCY

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AND

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The obstetric unit of the venereal division of the Washington University Clinics has been in operation for nearly twelve years. During this time the diagnosis of syphilis in the pregnant woman has been almost entirely by serology. Only 5.8 per cent of the pregnant syphilitic women in this clinic give a history of a primary or secondary lesion. Pregnant women tolerate treatment with arsenicals exceptionally well. Although nausea and vomiting are noted frequently, it is extremely rare to observe jaundice, dermatitis or other severe types of reaction to arsenicals. The pregnant syphilitic women who receive an "adequate" amount of treatment should have almost the same opportunity of delivering a normal child as the nonsyphilitic women. An "adequate" amount of treatment consists of a minimum of twenty weeks of arsenic-bismuth therapy with emphasis on the arsenical phase. Whenever possible, treatment should be started and completed with arsenic; bismuth being reserved for intervals between courses of arsenic.

This report is concerned with the results attained in the treatment of syphilis with mapharsen and lipobismol since 1940, correlating the amount of treatment during a pregnancy with the resulting status of the child.

The patients treated all had latent syphilis. Patients with primary or secondary lesions and those with a history of recent infection are referred for continuous drip therapy. With less than 6 per cent of the patients giving a history of infection, it is obviously difficult to classify these women as early or late tertiary syphilis and no effort was made to do so.

The routine of treatment is entirely dependent on the number of weeks of gestation available for therapy. Inasmuch as arsenic is the drug of choice, mapharsen is begun with the first visit and continued at weekly intervals for a period of time determined by the remaining duration of pregnancy.

A characteristic course of treatment is as follows: (1) mapharsen, ten treatments (from 0.03 gm. to 0.06 gm. each); (2) bismuth (lipobismol), ten treatments (1.0 cc. each); (3) mapharsen, ten treatments.

The last three mapharsen injections are overlapped with an intramuscular injection of bismuth.

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Should the patient present herself for care late in pregnancy, mapharsen alone is given at weekly intervals until the child is delivered. It can be

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noted readily that the regime is flexible; with stress placed on the importance of arsenic at the start and finish of treatment.

It is agreed that an arsenical is the drug of choice in the treatment of prenatal syphilis. A previous study of earlier cases indicated that a series of arsenic-treated patients produce end results at least three times superior to those observed in bismuth-treated women. In this report the analysis is based on the amount of mapharsen used without consideration of the amount of bismuth administered. Although we have used some bismuth as an ad interim treatment when at least twenty injections of mapharsen were insured, in these cases we feel that the birth of a nonsyphilitic baby is almost certain and the bismuth will be of added therapeutic value to the mother. Instead of an analysis on a statistical basis, we are presenting our findings in a manner which should be of benefit to the physician who occasionally has a pregnant syphilitic patient.

During the last three years, we have observed approximately five hundred pregnant syphilitic women. The first hundred babies were available for study at the age of 3 months so these will be discussed at this time. These one hundred pregnant women consisted of eighty-four seropositive and sixteen seronegative individuals. Sixty-five of the eighty-four seropositive patients delivered normal babies and nineteen of the group terminated disastrously. Of the seronegative women, fourteen obtained normal children and two terminated disastrously. Statistically, there was a 21 per cent incidence of disastrous termination. Among seropositive patients, 22.7 per cent terminated in fetal death as compared with 12.5 per cent among seronegative mothers.

A normal child is considered to be one who at 3 months of age has neither physical nor serologic evidence of the disease. There were seventy-nine such normal offsprings. The average total dosage of mapharsen in this group of women whose termination was satisfactory was 384 mg. The average number of treatments was 11.5 so that the average dose of mapharsen was 0.034 gm.

There were twenty-one disastrous terminations, nineteen from seropositive and two from seronegative mothers; thirteen abortions and miscarriages; six stillbirths and neonatal deaths, some of which were not attributal to syphilis and two seropositive living infants. Nevertheless, all are included in this group for the sake of discussion and no corrected statistics are reported.

Of the thirteen abortions and miscarriages, the average total dosage for the entire pregnancy was 140 mg. of mapharsen; none of this group received more than 250 mg. The average number of treatments in this group was 5.6 and no patient received as many as ten injections of mapharsen. Two of the patients in this group were known to have syphilis with negative serology.

There were five neonatal deaths. Three infants were born prematurely and died within the immediate lying-in period. These warrant individual

consideration. The first patient presented herself for care in the thirty-second week of gestation and delivered prematurely three weeks later after receiving a total of 90.0 mg. of mapharsen. The second patient was one of the first patients we treated with mapharsen. Treatment was begun during the first trimester of pregnancy but the gestation terminated prematurely in the thirty-fifth week of pregnancy. This patient received 280 mg. of mapharsen in ten injections, an amount which we recognize now as obviously inadequate. The third patient began treatment during the thirteenth week of pregnancy and delivered a premature infant after two mapharsen injections.

The two infants which were born alive but died before the third month of life are listed as neonatal deaths possibly due to syphilis because no serology was obtained before their demise. One mother began treatment at thirty-six weeks gestation and delivered a full term infant after four mapharsen injections totalling 90.0 mg. This baby died of bronchopneumonia and pulmonary hemorrhage. The second patient presented the difficult problem of a patient who was receiving treatment at the onset of pregnancy. Her attendance was desultory so that throughout the extent of a full term pregnancy she received only ten injections of mapharsen totalling 300 mg. The infant died in its second month of life of bronchopneumonia complicated by pneumococcus meningitis. The possible role of syphilis in this termination is problematic.

There was one intrapartum fetal death. This still-born child was a post-mature infant. Death was due to a prolapsed cord before complete dilation of the cervix. The mother was treated adequately; the infant was physically normal and the death had no relation to the syphilitic status of the mother.

Two living seropositive children were obtained. The first infant was one of twins. This seropositive child was a nonidentical twin whose sister was seronegative. The mother received 430 mg. of mapharsen during the last thirteen weeks of her pregnancy. Although the amount of treatment was greater than the average amount administered in the group of healthy babies, treatment was begun late in pregnancy and, by our present criteria, the amount was somewhat inadequate. The other living seropositive infant was born of a mother with central nervous system syphilis who received ten injections of mapharsen in the last trimester of her pregnancy. Here again the amount of treatment was inadequate for satisfactory results and treatment was begun very late to anticipate best results.

REACTIONS

Except for nausea and vomiting, reactions were remarkably infrequent. In this series of one hundred patients we observed two instances of transient pruritus, neither of which necessitated cessation of treatment. Nausea and vomiting occurred in 35 per cent of patients but treatment was not discontinued. Occasionally the individual dose was cut down for a week or two and then full dosage was

resumed. The presence of nausea and vomiting was inconstant, being present or absent in the same individual at various times with the same amount of drug. In recent months since increasing the amount of mapharsen to 0.05 to 0.06 gm. per treatment, it is our impression that nausea, when it occurs, is more severe. The gastrointestinal irritability noted normally during pregnancy precludes any further conclusions.

COMMENT

Study of this series of patients corroborates the consensus of opinion generally regarding syphilis complicated by pregnancy.

Treatment must be started early, before the middle of pregnancy, and must be adequate in amount. The one hundred patients treated with mapharsen exhibited good results with an average total dosage of 384 mg. of mapharsen per pregnancy. However, disastrous results did follow 300 mg. and once even with 430 mg. of mapharsen. In the latter case, however, treatment was begun during the last trimester.

Recently, we have gradually increased the dosage of mapharsen to 0.06 gm. per injection so that the average total dosage per pregnancy will be between 500 and 700 mg. With such dosage, provided we can begin treatment early enough, we hope to eliminate all seropositive infants. We have not observed any severe arsenical reactions with this increase in dosage of mapharsen.

CONCLUSION

1. A series of patients is reported from the prenatal unit of the Venereal Division of the Washington University Clinics.

2. One hundred patients whose children were available for examination at 3 months of age are reported.

3. Mapharsen was well tolerated. The most severe reactions noted were two cases of transient pruritus.

4. Patients who delivered normal living non-syphilitic babies received an average total dose of 384 mg. of mapharsen.

5. The disastrous terminations of pregnancy are discussed in detail. Only three patients receiving 300 mg. or more of mapharsen terminated badly.

6. Continuous type of treatment is employed.

7. The need for early initiation and adequate amount of treatment is emphasized.

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The Mapharsen and Lipobismol used in this study was made available through the courtesy of Dr. Ralph A. Perkins of Parke-Davis and Co.

From his experience with animals, and with a few patients treated with suspensions of sulfanilamide or sulfathiazole in soybean oil, D. Murray Angevine, M.D., Wilmington, Del., reports in the current issue of *War Medicine* that "I believe that this method of therapy (treatment) deserves a further trial in chronic osteomyelitis (inflammation of a bone) and in other types of infected wounds."

FITNESS, FOOD ALLERGY AND PREDISPOSITION TO COMMON COLD

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Approximately one eighth of the adult population claims to be cold-free. An equivalent number is unable to go through the season when common cold is prevalent without contracting three colds or more. Marked individual differences occur in susceptibility.

FITNESS

The ability to avoid common cold is associated closely with the ability to keep fit.¹ A preponderance of persons questioned finds it difficult to keep either fit or cold-free without adequate sleep and adequate conservation of the reserves against exhaustion. The most commonly attributed sources of exhaustion are those imposing stress on the temperature-regulating mechanisms: wet feet, chilling.

Studies at the Western Pennsylvania Hospital, Pittsburgh, have made possible a definition of fitness in its relation to ability to avoid low grade infection.¹ The first of these studies was carried out in the rabbit.

A series of rabbits was chilled, in cool water, until the body temperature had fallen below 96 F. After drying, the rate at which each individual temperature climbed back toward normal was measured. Some of the rabbits warmed up quickly after the chilling and some slowly.

Pneumococci were injected, intravenously, one or two days later. The number of organisms injected was sufficient to kill about ten out of every twenty unselected, healthy rabbits inoculated. The survivors were found to be, mainly, the rabbits that had warmed up quickly after the chilling test. The deaths were, mainly, in the group that had been able to warm up only slowly.

The second, third and fourth studies were carried out in man. Chilling could not be imposed conveniently. Exercise was tried first as a stress to bring out inherent differences in fitness. Finally, the reaction to inhaled 5 per cent carbon dioxide was utilized. When 5 per cent carbon dioxide was added to the inhaled air of some of the subjects, scarcely any change in heaviness of breathing occurred within the next minute. In others, a moderate increase in heaviness of breathing was observed and, in the remainder, an excessive increase. Colds were least frequent in the group with the moderate increase.¹

Perhaps the simplest and most convenient way of assessing fitness is through observation of the changes in the pulse rate during and immediately

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*Deceased.

after a definite stress on the circulation.² Persons with an excessive and persisting pulse rise after, for example, climbing up a given number of steps at a given rate, are less fit than persons with a moderate and quickly diminishing rise. The moderate reaction, showing ability to respond to the stress without strain, is the one identified with fitness and with minimum susceptibility to common cold. Fitness becomes defined in terms of ability to respond, effectively and without strain, to demands on function within the normally tolerated limits.

SOURCES OF IMPAIRMENT

The mechanisms entrusted with the defense against infection can be expected to function efficiently only when the larger, supporting machine—the body itself—is functioning efficiently and effectively. The number of possibilities for interference with the latter is as large as the list of emergencies with which life can be confronted. The effect on resistance of some of the more serious of these emergencies has been studied in animals.¹ Starvation and vitamin depletion have been found to produce a serious lowering of resistance but only when sufficiently extreme to cause such associated effects as drop in body temperature and lessened ability to warm up after chilling. Shock, exhaustion, endocrine deficiency, oxygen-lack, morphine, alcohol and other actions and agents similarly limiting functional efficiency, have a parallel, limiting effect on resistance.¹

Starvation, exhaustion, morphine-poisoning and the like, are unusual occurrences. They are not experienced, normally, to anything like the extent or frequency with which common cold develops. It was necessary to look farther, for actions commonly experienced in some connection with the orderly routine of life, for the sources of impairment which predispose more than 80 per cent of the population to an average of from two to three colds per year.

FOOD ALLERGY

Coca, in a study of the effect of food upon the pulse rate, found foods that produced no more than a moderate and quickly diminishing rise in pulse rate in some individuals and an excessive and persisting rise in others.³ This observation of a difference, from individual to individual, in degree of rise in the pulse rate following the eating of a given food, was more than just another way of demonstrating an existing difference in fitness among those individuals. The food itself produced the impairment. The individuals reacting to the test food with an excessive and persisting rise in the pulse rate were able to eat other foods without such reaction. Many of those showing no evidence of reaction to the test food reacted markedly to others.

The reaction appeared to have an allergic basis. The allergy involved resembled that involved in hay fever, asthma and atopic dermatitis in its

distribution between parent, child and family. It differed from the allergy involved in hay fever, asthma and atopic dermatitis in being nonreaginic. No specifically sensitizing, allergic antibodies were demonstrable in the blood.³

From 80 to 85 per cent of the total number of persons examined by Coca had some degree of this new kind of allergy, evoked by food, evading detection through skin tests but demonstrable through the pulse rise test. An unusually small number of colds was reported by the persons free of the allergy. A reduction in number of colds was obtained, in the remainder, following identification and elimination from the diet of the foods responsible.³

Three things stood out from these observations: (1) the percentage affected by Coca's nonreaginic food allergy was approximately the same as that known to be affected by common cold; (2) the pulse rise test through which the presence of the allergy was identified was proof of the fact that, in persons with nonreaginic food allergy, transient impairments in fitness occur sufficient to open the way toward common cold and, (3) the association of this transient lapse in fitness with habitually eaten foods insured a frequency of lapse sufficient to account for the known incidence of common cold.

THE ACCESSORY SYMPTOMS OF NONREAGINIC FOOD ALLERGY

Accessory symptoms are symptoms accompanying the pathognomonic symptom (the pulse rise phenomenon in the instance of nonreaginic food allergy) with sufficient regularity to have suggestive value. Coca explored forty-four cases of established nonreaginic food allergy for accessory symptoms and reported the following: urticaria, indigestion, abdominal pain, constipation, headache, canker sores, dizziness, tiredness, nervousness, neuralgia and sinusitis. These eleven most commonly accompanying conditions "whenever they were encountered as frequently recurring, always recurred upon subsequent tests with the incriminated foods, but at no other times (with one exception . . .)."⁴ Obviously, not all recurring headache and fatigue are of food allergic origin. The presence of accessory symptoms indicates only that the presence of the usually associated, underlying condition is probable—not certain. The probability increases with the number of accessory symptoms present.

Probabilities are useful guides when certainties are not available—particularly when studying groups of people rather than individuals. The presence of accessory symptoms had to be utilized instead of the more certain pulse rise test in the following study reported from Stephens College. The cooperating students could not be relied upon, in sufficient numbers, to keep trustworthy food and pulse records. They could be relied upon to reply honestly and intelligently to carefully phrased questions designed to inform the questioner how many of Coca's eleven accessory symptoms were present.

EXTENT TO WHICH THE ACCESSORY SYMPTOMS OF NON-
REAGINIC FOOD ALLERGY WERE FOUND TO BE PRESENT
IN A REPRESENTATIVE GROUP OF STUDENTS AT
STEPHENS COLLEGE

Six hundred students were questioned by Mrs. Irma Graham, R.N., after a month of preliminary training under Coca's direction, for information as to the extent to which the accessory symptoms of nonreaginic food allergy occur in girls of college age. Collateral information was secured from the parents and from a duplicate questioning, some weeks later, by Mrs. Ariel Niedringhaus, R.N.

The average number of symptoms found, per person, was near three. Fifteen per cent of the students were reported as having one symptom only and 79 per cent as having two or more. The presence of one uncorroborated symptom was considered indecisive. Only the 79 per cent with two symptoms could, therefore, be considered as probably possessive of symptoms indicating an underlying food allergy. This percentage corresponded, closely, to the figure of from 75 to 80 per cent found by Coca for the incidence of nonreaginic food allergy as determined by actual food test.⁵

NUMBER OF SYMPTOMS AND NUMBER OF COLDS

Each of the eleven symptoms was associated, on the average, with a larger number of colds than was observed in the absence of symptoms. Furthermore, number of colds increased directly and progressively with number of symptoms present. That is, the greater the probability found for the presence of an underlying food allergy, the greater was the extent of predisposition to common cold.

One hundred and sixty-three of the students did not smoke and were in sufficiently good condition to pass the following described fitness test. Of these, thirty-six had less than two of the accessory symptoms of nonreaginic food allergy while forty-five had four or more.

The group with less than two symptoms had an average of 0.9 colds, per person, for the 1941-1942 season. The contrasted group had an average of 1.8. One hundred and one of the nonsmokers failed to pass the fitness test. Of these, the seventeen with less than two symptoms had an average cold-incidence of 1.4. The thirty with four symptoms or more had an average of 2.8. Comparable differences were found among the smokers. The differences were statistically significant.⁵

NUMBER OF SYMPTOMS AND FITNESS

Approximate fitness was determined for the Stephens College group by a modification of a test developed by Flack, from his experience in World War I, as a test for fitness for combat flight.⁶ The pulse rate was taken after five minutes of quiet sitting. The subject then rose to her feet. A full breath was drawn and expelled. A second full breath was held for as long as was comfortably possible against a pressure of 20 mm. of Hg. (obtained by blowing, through a mouthpiece, into a manometer). The pulse beats were counted in

five-second intervals throughout the breath-holding period. A maximum rise, from the sitting value, of less than six or more than twenty-four beats per minute, or a breath-holding time of less than fifteen seconds, was considered evidence of the probable existence of impairment.

About 40 per cent of the 422 girls tested reacted to the modified Flack test with an indication of probable, impaired fitness. Only 29 per cent of the girls having no colds during the season 1941-1942 showed indication of impaired fitness at the time the Flack test was given as compared with the figure of 55 per cent found for the group having from four to seven colds. Impaired fitness was indicated for 47 per cent of the girls addicted to smoking as compared with the figure of 38 per cent for the girls not addicted to smoking.⁵

The percentage of modified Flack tests indicating impaired fitness was not significantly greater in the girls with three or more of the accessory symptoms of nonreaginic food allergy than in those with less than two. While Coca's pulse rise test shows that the individual is definitely below par at the time of reaction to a trouble making food *between reactions*, there is evidently no greater percentage of impairment than in persons free of handicap from food allergy.

Both handicap from food allergy and handicap from the impairment in fitness revealed by the Flack test were independently and substantially paralleled by a heightened incidence of common cold. A further and somewhat surprising, independently exerted handicap, was addiction to smoking. Higher cold incidences were found for the smokers than for the nonsmokers. The girls with the greatest total handicap from all three sources—food allergy, bad Flack test, and smoking—had roughly four times as many colds as those with the least total handicap.⁵

COMMENT

Handicap from nonreaginic food allergy has been shown by Coca to be correctible through so simple a procedure as investigation and selective restriction of the food intake.³ Handicap from the impairment in fitness revealed by the modified Flack test appears to respond to such procedures as elimination of infections, rest and hardening.^{6,7} Handicap from addiction to smoking—if it does affect the general population to the extent observed in the limited group studied at Stephens College—suggests its own solution.

The excessive losses caused by common cold to industry and to the war effort are avoidable. Such measures as isolation, air filtration and air sterilization go only halfway. The predisposition must be eliminated. This is a task requiring individual consideration and guidance by the family physician, aided by educational and economic pressures toward that end.

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CASE REPORTS OF THE BARNES HOSPITAL

CLINICAL AND POSTMORTEM RECORDS USED IN WEEKLY
CLINICOPATHOLOGIC CONFERENCES AT BARNES
HOSPITAL, ST. LOUIS

W. BARRY WOOD, JR., M.D., AND ROBERT
A. MOORE, M.D., Editors

CASE 13

PRESENTATION OF CASE

The patient was a 25 year old married Negro woman. She was admitted to the Barnes Hospital on November 23 and died on December 19, 1942.

Chief Complaints.—Diarrhea, jaundice, weakness, fatigue and dyspnea on exertion.

Family History.—Noncontributory.

Social History.—The patient was born in Illinois, had never had a job and had lived in St. Louis since she was married six years ago.

Past History.—She remembered diphtheria as her only childhood disease. Her general health has been excellent until the onset of the present illness.

Present Illness.—Approximately eighteen months before admission to the hospital the patient suffered an attack of "intestinal flu" with generalized muscular pains and malaise. The attack lasted only a few days but two weeks later she complained of diarrhea, having from ten to twenty watery stools a day. At no time had the patient noted blood or mucus in the stools. The diarrhea persisted intermittently until the time of admission to the hospital and during the last few weeks the stools were described as foamy and large in bulk. Seven months before admission to the hospital the patient noted for the first time that she was jaundiced; at about the same time she complained of increased weakness, fatigue and dyspnea on exertion. Stools were never clay colored and she did not complain of pruritus. Three weeks before admission she noticed that her ankles were swollen. Throughout her illness the patient was confined to bed for days at a time. Her diet appeared to be adequate and, in spite of her long illness, she stated that she had

lost only 3 or 4 pounds in weight. At no time had she complained of nausea, vomiting or abdominal pain. She denied having received antisyphilitic therapy and stated that she had taken no carbon tetrachloride or cinchophen.

Physical Examination.—Temperature was 37 C.; pulse 96; respiration 20; blood pressure 95/65. The patient was a moderately well-developed Negro woman lying flat in bed apparently not acutely ill. There was no obvious dyspnea. The skin and sclerae were markedly jaundiced. A fine, papular erythematous rash was present over the shoulders and trunk. The mucous membranes were somewhat pale but there were no petechiae. The pupils reacted normally to light and accommodation and the fundi were normal. The rest of the examination of the head was normal. There was no enlargement of the lymph nodes and the cervical veins were not engorged; the thyroid gland was normal to palpation and the trachea was in the midline. The lungs were clear to percussion and auscultation and the heart was not enlarged; the rhythm was regular and a harsh systolic murmur was heard in the second interspace to the left of the sternum. The abdomen was distended and tympanitic but no fluid wave or shifting dullness could be made out. One examiner described the liver edge 3 finger breadths below the right costal margin but other observers could not feel the liver. The spleen was not palpable and no masses were felt. The genitalia were normal. There was marked pitting edema of the legs and feet. No abnormalities were found in the neurologic examination.

Laboratory Findings.—Blood: red blood cells 3,700,000; hemoglobin 8.7 grams; white blood cells 15,400, differential count: basophils 2 per cent, eosinophils 1 per cent, myelocytes 1 per cent, juvenile neutrophils 5 per cent, "stab" forms 10 per cent, segmented neutrophils 68 per cent, lymphocytes 12 per cent, monocytes 1 per cent. Platelets appeared to be present in normal numbers in the blood smear. Bleeding time was 2½ minutes; coagulation time 7½ minutes; prothrombin time 43 per cent of normal. Urinalysis: dark brown urine, specific gravity 1.012, reaction acid, albumin negative, sugar negative; microscopic examination: occasional granular cast, urobilin 1 plus, bile pigment 3 plus, guaiac and benzidine tests negative. Stool examination: bulky, somewhat foamy, light brown in color, guaiac test 2 plus, bile pigments present; microscopic examination: no parasites or ova seen; fat stain Sudan III strongly positive. Blood Kahn reaction was negative. Blood chemistry: nonprotein nitrogen 14.0 mg. per cent, carbon dioxide combining power 61.4 mg. per cent; van den Bergh reaction 9.3 mg. per cent direct, 14.9 mg. per cent indirect; icterus index 100; serum calcium 8.1 mg. per cent; serum phosphate 3.1 mg. per cent phosphatase 8 Bodansky units; total proteins 7.2 grams per cent with albumin 1.6 grams per cent and globulin 5.6 grams per cent. Cephalin flocculation test 4 plus; hippuric acid excretion 23 per cent of normal. Blood amylase concentration 98 mg. per

cent. Duodenal drainage contained bile in small amounts and culture revealed *Streptococcus viridans* and *Staphylococcus albus*. Agglutination tests for typhoid and paratyphoid fevers, brucellosis and tularemia were negative.

Course in Hospital.—Throughout her stay in the hospital the patient had a low grade, irregular fever with persistent tachycardia. About one week after admission the physical signs of ascites became apparent and the patient's breath was described as "sweet." Radiographs of the chest and upper abdomen revealed no abnormalities. On the eleventh hospital day a paracentesis was performed and 900 cc. of straw colored fluid were removed; the fluid had a specific gravity of 1.008, total protein of 7 grams per cent and contained bile. It did not clot on standing and was sterile. The cell count was 950 per cubic millimeter; approximately 50 per cent of the cells were lymphocytes. On the same day a proctoscopy was performed and a small bleeding ulcer was seen in the mucosa of the rectum. On the following day a gastric analysis was done which showed no free hydrochloric acid but 20 degrees of combined acid after histamine. The blood culture was sterile and a stool culture showed no significant organisms. A second paracentesis was performed on the eighteenth hospital day and 2,700 cc. of fluid were removed. The fluid had the same characteristics as on the previous examination. At the same time the patient received 500 cc. of citrated blood and on the following day 750 cc. of plasma.

Gradually the patient became less responsive, took fluids and food poorly and had to be given intravenous therapy. The patient received choline, emetine and sulfadiazine therapy for several days; all of these were without effect. Her lethargy increased until she lapsed into deep coma and died on the twenty-seventh day in the hospital.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: In going over this record I find great difficulty in reconciling all the findings with a single diagnosis. The patient was a 25 year old Negroess who had been in excellent health until she had an apparently insignificant episode of "intestinal flu." Three weeks later she developed diarrhea which persisted throughout the remainder of her life. Unfortunately, she was too weak to be subjected to complete gastrointestinal studies. Dr. Hageman, do you have any suggestions as to why she had watery diarrhea at the outset and later noted that her stools were more bulky than normal?

DR. PAUL HAGEMAN: The history is suggestive of some disorder in the digestion of fats associated with pancreatic insufficiency.

DR. ALEXANDER: Watery diarrhea is not necessarily associated with pancreatic insufficiency. Do you think the very low value of hydrochloric acid in the gastric juice might imply a gastrogenous diarrhea?

DR. HAGEMAN: Did the diarrhea immediately follow her meals?

DR. EDWARD REINHARD: The patient had about twenty stools a day.

DR. HAGEMAN: I do not believe that the diarrhea could have been gastrogenous.

DR. ALEXANDER: We are somewhat at a loss then to account for the diarrhea until it changed its character and became productive of large, foamy stools in which a Sudan III stain showed a great deal of fat. Of course, that suggests a pancreatic insufficiency. Is there anything else in the record that would substantiate this diagnosis? Do you consider the report of 98 units of amylase high? In terms of conventional units it is usually from 15 to 30, but I am not sure whether or not in your laboratory you use the conventional method.

DR. HAGEMAN: A value of 98 units is very low according to our technic. Normal values run up to 250.

DR. ALEXANDER: Is there anything further besides the low amylase value and character of the stools that would suggest pancreatic insufficiency? That condition, of course, is rather rare. The fatty stools in pancreatic disease are due to an insufficiency of steapsinogen which is elaborated by the pancreatic cells and activated by the bile. If we had one more bit of information, namely, evidence that the muscle fibers in the stools were poorly digested owing to a deficiency of trypsin as well as steapsin, we could say with reasonable assurance that this was pancreatic insufficiency. Another procedure, although a little more difficult, which might have been carried out, was to estimate from duodenal drainage the quantity of trypsin and steapsin present. All we have to go on at present is the character of the stool which contained much fat. In pancreatic deficiencies the fat content may be very high but pancreatic insufficiency is not the only condition that will give such abnormal stools. Sprue and intestinal tuberculosis may be associated with steatorrhea. I do not believe, therefore, that there is sufficient evidence to make a positive diagnosis of pancreatic insufficiency. Do you agree?

DR. HAGEMAN: The matter of liver function must be discussed. You have not gone into that as yet but certainly the bile has a great deal to do with digestion of fat. In the absence of bile one would not expect absorption of fats.

DR. ALEXANDER: That is correct but there was bile present in the duodenal drainage and there were bile pigments in the stools. It has been shown by Opie that a small amount of pancreatic tissue is sufficient for normal digestion and that only in severe cases does insufficiency occur. When we come to the next sign, jaundice, we can speak with more assurance. There is a great body of evidence that the liver is badly compromised; the hippuric acid test is low and the low serum protein indicates that the liver has lost its ability to make a normal amount of serum albumin but that it retained a greater ability to make serum globulin. The patient had a very low prothrombin time and, when this finding is noted, one may postulate a serious lesion of the liver. The van den Bergh test was

biphasic and there was a retention of bile pigments in the blood. The odor of the breath was described as "sweetish," a sign noted in the end stages of hepatic insufficiency. The coma is in keeping with a failing liver and I understand that her blood urea was 8 mg. per cent. That is low and suggests severe liver damage. I presume, therefore, that one may expect to find marked structural changes in the liver. Dr. MacBryde, do you agree?

DR. CYRIL MACBRYDE: Yes, I do.

DR. ALEXANDER: Her liver must have lost its power of regeneration for I believe that approximately 75 per cent of the liver must be destroyed before one gets clinical evidence of loss of function. What could have so damaged her liver?

DR. CARL HARFORD: It could have been due to some poison or to infection. The onset suggests infection.

DR. ALEXANDER: Dr. Moore, the blood count suggests infection. Will you comment on this?

DR. CARL MOORE: With tissue injury, one may get sufficient absorption of the products of cellular destruction to give fever and leukocytosis.

DR. ALEXANDER: Streptococci were grown from the material secured from duodenal drainage. Dr. Wood, do you consider this finding significant?

DR. WILLIAM BARRY WOOD, JR.: I do not. These organisms probably came from the mouth. Patients swallow many streptococci and some may survive passage through the stomach and reach the intestinal tract.

DR. ALEXANDER: Apparently it is agreed that the liver had failed and one may expect to find evidence of either a toxic or an infectious hepatitis. Are the pathologic sections of the liver likely to show anything else?

DR. EDWARD MASSIE: If one considers that this patient had eighteen months of diarrhea and that eight months after the onset of this condition jaundice and other evidence of liver disease appeared, the possibility arises that she had amebic dysentery and subsequently developed liver abscesses as a complication.

DR. ALEXANDER: This woman's diarrhea was untreated for eighteen months, then she received a few doses of emetine in the hospital. No parasites were found in her stools. We are at a disadvantage because we could not carry out a roentgenologic examination of the colon. It is stated that a proctoscopic examination revealed a small ulcer. Were smears taken from this ulcer?

DR. REINHARD: Yes. No parasites were found.

DR. WOOD: Would an amebic abscess cause jaundice?

DR. ALEXANDER: There would have had to be great destruction of the liver.

DR. WOOD: Dr. Hageman made the suggestion on the ward that the patient might have a diffuse hepatitis due to *Entameba histolytica*.

DR. HAGEMAN: A diffuse amebic process in the liver without abscess formation may occur and would account for the jaundice.

DR. CARL MOORE: I should think that the history

would be compatible with cirrhosis of the liver, and the development of ascites points to this.

DR. ALEXANDER: What about the value for protein in the ascitic fluid? Is that in keeping with fluid from cirrhosis?

DR. CARL MOORE: I should think so.

DR. HAGEMAN: I think the protein value was too high for cirrhosis. Her edema was not dependent edema.

DR. ALEXANDER: According to Opie's report, 25 per cent of the cases of chronic pancreatitis had cirrhosis of the liver. Was the colloidal osmotic pressure sufficiently low to cause edema?

DR. CARL MOORE: It amounts to 17. The threshold is about 20.

DR. ALEXANDER: Do you feel that the ascites could have been accounted for by the low blood proteins?

DR. HARFORD: This process evidently has gone on for eighteen months so some repair must have accompanied it and there is probably some fibrosis. I would think that there was liver damage with repair but not the usual lesion of Laennec's cirrhosis.

DR. ALEXANDER: Since this patient had a systolic murmur and dyspnea, should we expect to find evidence of heart disease?

DR. MASSIE: The murmur is undoubtedly a functional one in view of the fact that it was limited to the pulmonary area and since her anemia, fever and tachycardia could easily contribute to the production of such a murmur. I do not believe we will find any evidence of heart disease.

DR. ALEXANDER: Are there any other suggestions?

DR. LAUREN ACKERMANN: Do you find fluid in the abdomen with acute yellow atrophy with marked liver damage?

DR. ALEXANDER: Any liver damage that lasts long enough to give a low serum protein may lead to ascites.

DR. WOOD: Is there any way to connect a possible pancreatic lesion with the liver disease?

DR. ALEXANDER: Clinically, severe chronic pancreatic insufficiency is uncommon. When it does occur, it is often due to retrograde infection from the bile ducts. One may produce chronic pancreatic insufficiency by injecting bacteria into the pancreatic ducts. In this case either the pancreas will show nothing at all or it will show great damage. All we have to go on is the character of the stools.

DR. WOOD: I would like to know what you consider the most plausible diagnosis.

DR. ALEXANDER: The evidence is such that one can only guess. The patient's stools were fatty with no indications of sprue or of mesenteric tuberculosis. This suggests the possibility of pancreatitis complicating the obvious liver disease.

DR. CARL MOORE: There is another possible explanation for the clinical findings. I think in severe vitamin A deficiency one finds pancreatic fibrosis. The fatty stools came on late in the course of the disease and they may have been due to pancreatitis caused by vitamin A deficiency which in turn was

due to an inadequate absorption of fat associated with hepatic insufficiency.

DR. ALEXANDER: Have you observed such a case?

DR. CARL MOORE: No, but it is reported in children.

CLINICAL DIAGNOSIS

(?) Cirrhosis of liver, Laennee's.

(?) Interstitial pancreatitis, chronic.

(?) Acute and chronic hepatitis, etiology unknown.

DR. ALEXANDER'S DIAGNOSIS

Toxic hepatitis.

(?) Chronic pancreatitis.

ANATOMIC DIAGNOSIS

Subacute yellow atrophy.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: The liver was small and weighed only a thousand grams. On the cut section there were small (up to 6 millimeters in diameter) nodules of yellow, parenchymal tissue, enclosed in a network of dense, grayish white, fibrous tissue. In some large foci the parenchyma was entirely destroyed. There was evidence both of active destruction and of active regeneration of the hepatic cells. The inference might be drawn that for eighteen months the liver of this patient had been subjected to some toxic agent—an agent capable of inducing necrosis of hepatic parenchyma, but not of sufficient intensity to bring about death from acute insufficiency. Many pathologists and clinicians designate this type of lesion as toxic cirrhosis since it is similar to the alterations seen following arsenic and cinchophen.

We have considered the possibility that this is an infectious cirrhosis similar to those reported by McMahon and Mallory. Cultures were not made of the liver, but the histologic appearance is not similar to that reported by these authors.

The pancreas showed a slight interstitial fibrosis. There was no evidence of vitamin deficiency. There were no anatomic lesions in the intestine to account for the diarrhea.

CASE 14

PRESENTATION OF CASE

The patient was a 67 year old white man who was admitted to the St. Louis County Hospital on November 11, 1940, and died November 18, 1940.

Chief Complaints.—Cough, dyspnea and pain in the right chest for three weeks.

Family History.—Patient's wife died fifteen years ago as a result of a burn. Four sisters are living and well. One brother is living but crippled from an injury in the last war. There is no family history of tuberculosis, cancer, diabetes or cardiac disease.

Past History.—The patient was born in the United States and has lived for the last eleven years in St. Louis County. During this time he has not left the immediate vicinity of St. Louis. He has been in

good health for most of his life. One year ago the patient suffered from an attack of severe diarrhea which lasted approximately three months and then gradually subsided. The patient stated that during this attack he noticed both blood and mucus in his stools and lost approximately 20 pounds in weight.

Present Illness.—Three weeks before admission to the hospital the patient noticed hoarseness and a mild cough. He felt feverish and complained of generalized pains in the muscles and a feeling of tightness in the right chest. Two weeks before admission a severe paroxysmal cough developed. The cough was productive at first of yellow sputum, but later the sputum became white, frothy and tenacious. The patient consulted a physician two weeks before admission and was given some form of oral medication. The cough and shortness of breath increased in severity and he finally went to the hospital.

Physical Examination.—Temperature was 100.6 F., pulse 124, respiration 40, blood pressure 130/70. The patient was a well developed and fairly well nourished elderly man, rational and cooperative. He was in no acute distress and complained of no symptoms except the paroxysms of coughing. The head, scalp, eyes and ears were normal. In the nose there were a few dried crusts. The teeth were worn, dirty and carious. The mucosa of the pharynx was swollen and red. The neck was normal. The respirations were of the abdominal type and the right side of the chest moved less than the left. Tactile fremitus was diminished on the right and the percussion note was dull over the entire right side both anteriorly and posteriorly. The breath sounds were diminished greatly on the right and voice sounds were transmitted poorly. On the left the breath sounds were increased slightly with numerous coarse rales. The apex beat was visible 12 cm. to the left of the midline. The area of cardiac dullness extended 12½ cm. to the left of the mid-sternal line. The cardiac rhythm was regular and there were no murmurs. The abdomen was flat. In the right upper quadrant of the abdomen there was definite rigidity of the muscles and the liver could be felt 4 cm. below the costal margin. There were small external hemorrhoids. The prostate was small, firm and smooth. There was slight edema of both ankles. The reflexes in general were hypoa-

Laboratory Findings.—Blood: hemoglobin 70 per cent, red blood cells 4,300,000, white blood cells 13,000, differential count: "stabs" 10 per cent, segmented forms 70 per cent, lymphocytes 20 per cent. Blood chemistry: sugar 102 mg. per cent, non-protein nitrogen 37 mg. per cent. Kahn and Hinton tests were negative. Sputum: no tubercle bacilli and no typable pneumococci present. Streptococci were seen in the stained smear. Stool: dark brown, well formed, no ova or parasites seen, guaiac test negative.

Course in Hospital.—Radiographs of the thorax revealed an opacity of the entire right thorax with displacement of the heart to the left. "The condition

is probably due to a large amount of fluid in the right chest." About 335 cc. of dark maroon colored serous fluid was withdrawn on the first hospital day. In a smear of this fluid a few pus cells were seen, but no bacteria. Cultures of the pleural fluid were sterile. A second examination of the stool revealed no ova, occult blood or other abnormal findings. A second thoracentesis was performed on the fifth hospital day and 400 cc. of similar fluid were removed. Bacteriologic cultures of the fluid revealed a few colonies of nonhemolytic *Staphylococcus aureus*. On the afternoon of the sixth hospital day the patient suddenly became more dyspneic and gasped for breath. The skin of the extremities was cold and the blood pressure 120/75. Coarse rales were heard throughout the left chest. Despite the administration of intravenous glucose and coramine the patient died about twenty-four hours after the onset of the severe dyspnea.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: The factual data in this case are so scant that we will have to do an unusual amount of guessing. Our attention is directed to the very unusual lesion in the chest. The signs of diminished tactile fremitus and distant breath and voice sounds are in keeping with the signs of fluid whatever else may be in the lung. Moreover, rather small amounts of bloody fluid were secured on two aspirations. Dr. Goldman, what is the most common condition that will produce bloody fluid in the pleural cavity?

DR. ALFRED GOLDMAN: Metastatic carcinoma of the pleura.

DR. ALEXANDER: Other than the roentgen ray findings, we know nothing about the process in the left lung. We do know that sanguinous fluid was secured from the pleural cavity. The cough was not very impressive at first. The sputum was clear. Dr. Goldman, is carcinoma of the pleura ever primary?

DR. GOLDMAN: It is doubtful whether carcinoma of the pleura is ever primary. Most of the cases are secondary to bronchial carcinoma.

DR. ALEXANDER: Are the intestinal symptoms in keeping with carcinoma?

DR. GOLDMAN: They are not.

DR. ALEXANDER: Has this case impressed you as one of carcinoma of the lung?

DR. GOLDMAN: No.

DR. ALEXANDER: What is lacking?

DR. GOLDMAN: We do not have a history of hemoptysis or early cough. The patient's general condition just prior to his terminal illness was apparently good. These facts would be against carcinoma.

DR. ALEXANDER: This man appeared well a month before his death and came into the hospital in reasonably good health. Is there any reason to presume that he had tuberculosis?

DR. GOLDMAN: No, there is not.

DR. ALEXANDER: Could this be Hodgkin's disease of the lung?

DR. GOLDMAN: This does not strike me as being Hodgkin's disease of the lung.

DR. ALEXANDER: Are there any other suggestions?

DR. HIROMU TSUCHIYA: If an abscess of the liver were present it seems probable that there might be an amebic abscess of the lung.

DR. ALEXANDER: What about his not having lived outside St. Louis County? Is this relevant?

DR. GOLDMAN: No, it is not.

DR. ALEXANDER: The man had diarrhea. He had blood and mucus in his stools, and that would be in keeping with amebiasis. A man of 67 who has diarrhea to this degree for three months usually does not recover spontaneously. What about the diarrhea of amebiasis? May it be severe and stop suddenly?

DR. TSUCHIYA: Yes, that may occur, but the past history of diarrhea with mucus and blood plus the clinical picture of fever, enlargement of liver and leukocytosis are strongly suggestive of amebic abscess. In about 20 to 40 per cent of the cases of liver abscess there is no history of diarrhea or dysentery, and in from 60 to 80 per cent there is a previous history of diarrhea or dysentery. By dysentery we mean blood and mucus in the stool. Moreover, the absence of the ameba in the stool does not eliminate the possibility of liver abscess as the abscess may develop long after the intestinal lesions have completely healed. The fluid from the pleural cavity was a brown color, so we may infer that it would be an extension of the abscess from the liver into the pleural cavity.

DR. ALEXANDER: I would like to know if the ameba can be found in the pleural fluid if it were due to a rupture from the liver.

DR. TSUCHIYA: Yes, in the typical abscess you will find ameba and a few pus cells in the fluid.

DR. ALEXANDER: There was a period of eight or nine months during which time this man was well. Could he later develop a liver abscess?

DR. TSUCHIYA: Yes, if the abscess is small. Clinical symptoms may be absent until the abscess attains a fairly large size.

DR. ALEXANDER: Does rupture occur into the lung or into the pleural cavity?

DR. TSUCHIYA: Into both. Probably in the same frequency.

DR. ALEXANDER: May one have the amebic abscess of the lung without having an amebic abscess of the liver? What would be the route?

DR. TSUCHIYA: Yes, the route would be through the blood stream from the large intestine.

DR. ALEXANDER: What about the sputum in amebic abscess?

DR. GOLDMAN: The characteristic sputum is the so called "anchovy sauce" sputum.

DR. ALEXANDER: What about the possibility of an echinococcus cyst?

DR. TSUCHIYA: If it ruptured, it would induce anaphylactic shock.

DR. ALEXANDER: Such cases are rare in this part of the country. Dr. Goldman, from 300 to 400 cc.

of fluid were removed from the patient. May one infer that this fluid was so thick that more could not be secured?

DR. GOLDMAN: Either the fluid was too thick or the patient may have had a reaction to the aspiration. The evidence suggests that much more fluid was present.

DR. EDWARD MASSIE: What about the history as to why only from 300 to 400 cc. of fluid were removed? There is no statement that aspirations were stopped because something happened to the patient.

DR. ALEXANDER: The inference is that no more fluid could be secured. Has anyone any suggestions about this case other than it is amebiasis originating in the bowel with subsequent liver abscess which later ruptured into the pleural space? The rupture into the pleural cavity rather than into the lung would seem more likely since it is a common site and since there was no evidence of bronchial drainage with characteristic sputum.

DR. ALEXANDER'S DIAGNOSIS

Amebic abscess of liver with perforation of diaphragm into the right pleural cavity.

ANATOMIC DIAGNOSIS

Amebic ulceration of cecum and ascending colon.

Amebic abscess of liver.

Amebic abscess of subphrenic space with involvement of the wall of inferior vena cava.

Perforation of the diaphragm.

Empyema of right pleural cavity, 32 cc.

Atelectasis of right lung.

Bronchopneumonia, right lung.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: The ulcers in the cecum and ascending colon were deeply undermined but there was no evidence of healing. Amebae were demonstrated in the intestinal wall, in the hepatic abscess and in the pleural inflammation.

This case was investigated carefully by the Department of Health and no apparent source of the infection was found. There have been a few other cases of amebic dysentery in the residents of St. Louis County in the last five years. A small percentage of individuals in this part of the country are carriers of *Endameba histolytica*. It is possible that the sporadic cases are acquired from carriers.

Reporting on the recent accidental poisoning with roach powder of 263 inmates of the Oregon State Hospital, Salem, 47 of whom died, William L. Lidbeck, M.D., and Irvin B. Hill, M.D., Salem, and Joseph A. Beeman, M.D., Portland, advise in *The Journal of the American Medical Association* for March 13 that sodium fluoride, the chief ingredient of roach powder, should be packaged, labeled and distributed the same as any other well known poison.

They also say it should be colored so it will be less easily mistaken for certain food substances which it closely resembles. In the Salem accident it was mistaken for powdered milk.

ABSTRACTS AND DIGESTS

INHALANT ALLERGY

Kochia Scoparia as a Factor in Inhalant Allergy. Oren C. Durham. *J. Allergy* 14:160-170 (January) 1943.

Kochia Scoparia, a member of the order of Chenopodiales, known as burning bush, fireball, Mexican fireweed and summer cypress, is an erect, densely bushy, much-branched annual, from one to five feet high with narrow linear leaves and inconspicuous axillary flowers. As a weed it has a strong resemblance to Russian thistle, and both plants are known as tumbleweeds. It probably got its start as a pest by reversion from the cultivated variety commonly used as a decorative plant under the name of summer cypress. Its season of pollination is confined mostly to August and its active shedding of pollen terminates by the first week in September.

Its pollen gave positive skin reactions in a small series of patients who were skin sensitive to the pollen of Russian thistle, and who came from localities in which Russian thistle was an active inhalant factor.

The author discusses the spread of this plant during recent decades. It is now luxuriant in Iowa, Nebraska and Colorado, and has spread to Western Kansas, the Dakotas, and has been found in Kansas City, Milwaukee, Minneapolis, Chicago, St. Louis, Detroit and Indianapolis. He suggests that, in the regions of the middle Mississippi Valley, the pollen of Kochia should be used in routine testing because of its increasing concentration in the air (as determined by the study of pollen slides exposed at the stations of the United States Weather Bureau), and its close relationship to Russian thistle, which is a potent cause of hay fever in certain sections of the United States.

Comment: There is an abundant growth of Kochia in St. Louis and also in Kansas City (Dr. Orval R. Withers). However, it is only in the last few years that a small number of patients have given positive skin reactions to its pollen. This experience is similar to that of Dr. Orval R. Withers, Kansas City, Missouri. It is probable that in the future a greater percentage of patients will be hypersensitive to it in this district for it has been the experience of Dr. E. L. MacQuiddy, Omaha, Nebraska (where its growth is abundant and it has been present for a longer time), that the percentage of patients giving positive cutaneous reactions is on the increase.

C. H. EYERMANN, M.D.

ACUTE OTITIS MEDIA

The Sulfonamide Drugs in the Treatment of Acute Otitis Media. Harold G. Tobey. *Ann. Otol., Rhin. & Laryng.* 51:945-954 (December) 1942.

In the above captioned article, the author gives the order of the development of these drugs as follows:

Sulfanilamide, toxicity rated high, used in strep-

tococcal infections; sulfapyridine, lower toxicity, more effective in pneumonia; sulfathiazole, still less toxic, proved to be effective not only against staphylococci but also against streptococci and pneumococci; sulfadiazine, least toxic of all, is effective against all coccal infections.

Toxicity of these drugs manifests itself usually in the second week of administration, more often between the tenth and fourteenth days. Occasionally a rise in temperature may occur during the first twenty-four hours. By stopping the drug one can evaluate the progress of the infection.

Ten to 15 per cent of patients may become sensitized to the drug which is evidenced by high temperature, skin eruption and severe toxicity. Then, too, it must be remembered that the use of these drugs can mask symptoms of progressing infection in otitis media and mastoiditis.

The incidence of otitis media has been found to be 35 per cent in winter, 40 per cent in spring, 15 per cent in summer and 10 per cent in the fall. Severity of infection depends on virulence of organisms which predominate.

Epidemics may vary in virulence and show distinct cycles, beginning with mild otitis media, gradually increasing to a peak of virulence, then subsiding. Kopetzky has reported a distinct periodicity in the virulence of infections and has suggested that a major cycle occurs about once in six years.

Many authors have reported favorably on the treatment of the acute suppurative diseases of the middle ear by the use of these compounds. It is suggested that since sulfadiazine is less toxic, it be used in the onset of acute otitis media until cultures show definitely what the invading organism is, then its use can be replaced by sulfanilamide or sulfathiazole if the course of infection should make it desirable. The general practitioner, pediatricist as well as otologist, must ever keep in mind that in spite of the administration of these drugs in what is considered to be adequate dosage, and the institution of other appropriate measures, mastoiditis will develop in a certain percentage of cases, and that the continuance of a purulent discharge from the middle ear following a week of what, according to present knowledge, is considered adequate medication with the drug from the very beginning of the infection, should be sufficient evidence that the infection is not controlled.

J. L. MYERS.

GASTROSCOPY

The December 1942 number of *The American Journal of Digestive Diseases* presents several papers read at the June meeting of the American Gastro-Enterological Association, along with illuminating discussions on the subject of gastroscopy. Since the advent of the Wolff-Schindler gastro-scope, much experience has accumulated as to its major and relative values in comparison with other diagnostic measures. How often did gastroscopy furnish the chief data for diagnosis? Renshaw and his associates state that in 217 patients, one-fourth

of his total series, gastroscopy played this major role. More than half of these cases, however, belong in the gastroscopist's category of "gastritis," that disease of dubious and debatable pathology and indefinite symptomatology. Another large section of this group consisted of cases in which roentgen ray examination was indeterminate and gastroscopy excluded the presence of disease; but as Renshaw remarks, gastroscopy cannot always definitely exclude organic disease because of its inability to visualize all of the stomach. On the other hand, in ten of this group of 217 patients the gastro-scope revealed a gastric ulcer which roentgen ray had failed to demonstrate. In somewhat more than half of the entire series gastroscopy was of positive though minor value in that it confirmed the diagnosis already made, usually roentgenographically. Among the remaining cases was a group representing 19 per cent of the total series in which gastroscopy failed to confirm the correct diagnosis made by other means or offered incorrect or misleading information. The reasons for these failures were various. Limitations of the instrument, noncooperation of the patients and anatomic factors were the chief ones.

In a group of 170 cases, selected from the series because the diagnosis had become definitely established by the lapse of time, by operation or autopsy, the gastroscopic and roentgen ray findings were in agreement in 109 cases. Both methods were wrong in nine instances and indeterminate in fourteen. Roentgen ray was correct and gastroscopy was indeterminate in fifteen, while gastroscopy was correct and roentgen ray indeterminate in twenty-three cases.

In the discussion of the several papers the term "atrophic gastritis" was questioned and the suggestion was made that "atrophy of the gastric mucosa" was the proper term for the gastroscopic picture frequently seen in deficiency states.

Without entering into the question of etiology or symptomatology, Schindler and Ortmayer present the histopathology of chronic gastritis from specimens taken at operation or, in cases of histamine anacidity, at autopsy. Adhering to their gastroscopic classification of superficial, atrophic and hypertrophic gastritis, they present the typical histologic picture of each, thus establishing a sound basis for all future study and discussion.

JEROME E. COOK, M.D.

WARTIME CONTROL OF VENEREAL DISEASES

The Wartime Control of Venereal Diseases: Problems in the Application of Recent Scientific Discoveries. John H. Stokes. *J. A. M. A.* 120:1093 (Dec. 5) 1942.

The author in discussing the fallibilities of the uncovering mechanism for the venereal diseases is concerned over the number and reasons for the false positives which are obtained in the serologic tests for syphilis. Moreover, he states that the blood

test cannot be used as the sole basis for treatment, insisting that competent and careful clinical observation plays an equal, if not more important role, in the evaluation of the patient. Most syphilis is latent, the early variety requiring vigorous treatment, while later latency in middle life requires but moderate treatment. He emphasizes that most individuals' competency is not interfered with by their latent syphilis and that much occupational discrimination is uncalled for.

He likewise feels that there is serious danger of error in the darkfield identification of *Treponema pallidum* when the test is in the hands of an inexperienced observer. He adds that the inaccuracy of our present tests for gonorrhea, as in syphilis, tends to promote treatment on suspicion or presumption rather than on diagnosis and certainty.

With regard to all foreshortening and intensification plans for the treatment of syphilis, the principles to be borne in mind in interpreting all such plans should be as follows:

Syphilis either cures itself or comes to serologic arrest with little damage in from possibly 40 to 50 per cent of cases. A small amount of treatment is capable of raising the expectancy of "cure" to an unknown degree, perhaps as high as 70 per cent. Therefore, either the foreshortened intensive therapy or the conventional eighteen month regime are directed at a relatively small segment of unpredictably resistant infections. Any new system proposed should be judged on its ability to equal or surpass the "curative" expectancy of the older one, to lead to less infectious relapses, to cure more mothers and protect more children, reduce the incidence of cardiovascular and neurosyphilis, and by its relative risk to the patient. From two to ten years may be necessary for an evaluation of a new system. If a system meets these requirements, then other factors such as cheapness, rapidity, controllability of the lapse factor become important although still secondary to the control of infectiousness and real curative power. The complications and bad effects of a new system in their risk to a patient must be given grave consideration when compared with a less dangerous method.

The author says that intensification methods do not greatly reduce the relapse tendency and that the time saved in treatment is more apparent than real, but that the intensified foreshortened methods offer a better opportunity to give a larger proportion of patients a maximum of drug. The incidence of hemorrhagic encephalopathy and encephalitis (non-fatal) would appear, however, to be materially increased in the foreshortened treatment. A compromise between a system requiring fifteen days or less of treatment and the eighteen month system is suggested in the six to ten weeks systems now under study. A combination of foreshortened therapy and artificial hyperpyrexia also offers promise, according to Stokes.

ROGERS DEAKIN, M.D.

KELOIDS

Keloids. John Gard, and M. J. Stone. *Am. J. Surg.* 58:315 (December) 1942.

This is an analysis of eighty patients with various

types of keloids which were treated with radiologic technic.

A keloid is a benign proliferative growth arising in the subpapillary layer of the skin and is always secondary to a known or unknown traumatic insult. A tendency to recur following removal is a characteristic feature.

The predisposing causes of keloids are: (1) racial (dark races); age (10 to 20 years); fibroplastic diathesis; regional susceptibility; delayed epithelialization, and hormonal stimulation or imbalance. The authors favor the latter theory.

The exciting stimuli are: traumatic insults from incised wounds, electrosurgical (cautery, electrolysis and electrocoagulation), acne, pustules and comedones, chicken pox, herpes zoster, sycosis vulgaris, drug eruptions, hidradenitis suppurativa, healed late syphilis and tattooing. In this series twelve of the cases followed acne of the face, chest or back.

Diagnosis is usually simple. There is a history of trivial or definite trauma, involvement of a suspicious site (sternum, ear lobe or back) and characteristic physical features.

Differential diagnosis is seldom necessary but occasionally keloid-like new growths may offer difficulty.

Hypertrophic scars do not extend beyond the limits of the original injury. There are no claw-like projections; they are seldom elevated more than one-sixth of an inch above the surface and spontaneous disappearance is common.

Subepidermal fibroma usually occurs as a nodular hard lesion on the anterior aspect of the ankles or legs; there is no history of antecedent injury and the pathologic picture is distinctive.

Morphea (localized scleroderma) is not apt to cause trouble because the color markings are often typical. The lesions are stony hard, ivory white or waxy yellow in color and surrounded by a violaceous zone. Histologically the collagen bundles are hypertrophied and stain reddish brown rather than red with the van Gieson stain.

Cutaneous sarcoids are often keloidal in the Negro and may occur on the alae nasi, cheeks and nape of the neck. The yellowish brown color, lung and bone involvement and the history are always useful.

Prognosis must be guarded. Occasionally a recent keloid may be radioresistant while an old one may respond to small doses. However, many keloids respond to radiotherapy with flattening to a greater or less extent. The cured cases are left with some residual atrophy and more or less telangiectasis at the site of the keloid. Results in the authors' series of cases were: 20 per cent were cured by filtered roentgen ray radiation. Two cases were found to be radioresistant and uninfluenced by any measures.

Filtered roentgen ray therapy is the method of first choice. They used 1 mm. aluminum filter with a dose of 112 r weekly for small keloids and 275 r with 3 mm. aluminum filter every three to four weeks for the large lesions. From six to eight treatments are usually necessary. The lesions must be shielded right up to the edge of the growth to protect the normal skin.

Radium is used for inaccessible growths, the one half strength plaque applicator being used. The gamma rays are used for the deeper keloids more than from 1 to 2

mm. thick while the beta rays are utilized in the more superficial growths.

Massage with coca butter is useful in keeping keloids about the joints from interfering with motion.

Surgical excision is necessary for removal of large and irregular keloids. A minimum of trauma and aseptic technic is necessary. Postoperative roentgen ray therapy is of no value until the actual keloid begins to recur at the operative site.

Fibrolysin injections are mentioned only to be condemned as worthless. NORMAN TOBIAS, M.D.

TREATMENT OF HAY FEVER

Oral Treatment of Hay Fever With Ragweed Pollen. Elizabeth H. Iliff and Leslie N. Gay. Bull. Johns Hopkins Hosp. 70:378-384, 1942.

The authors gave capsules containing dried whole ragweed pollen mixed with starch to eighty-two patients suffering from ragweed pollenosis during the summer of 1940. In those with low skin sensitivity or who had had recent treatment by hypodermic injection with ragweed solution, the initial dose was from 1,500 to 8,000 Noon units; otherwise it was 500 Noon units. The doses were given soon after meals and increased according to a definite schedule until a daily dose of from 60,000 to 240,000 units was attained.

Sixty-two patients were treated preseasonally. They were given the capsules two or three times a week, increased to daily with the onset of symptoms. Of these, three (4.8 per cent) had an excellent result (no more than occasional sneeze or very slight itching of nose or palate or both); ten (16.1 per cent) had good relief (subjectively much better than they had been previously; symptoms never disabling nor interfering with sleep); and twenty-five (40.3 per cent) fair relief (somewhat better than in previous years but with daily mild and occasional severe symptoms). Twenty-one (33.9 per cent) were complete therapeutic failures and three (4.8 per cent) stopped treatment because of reactions.

Twenty patients were treated coseasonally. The capsules were given daily, and in some cases three times daily, until the maximum dose was reached. None of these patients had an excellent or good result; fourteen (70 per cent) had a fair result; four (20 per cent) obtained no relief; and two (10 per cent) stopped treatment.

Sixteen of the patients receiving oral therapy had received injection therapy in 1939 and thirteen more had had injection therapy at some previous time but not in 1939. In general, the oral method was less helpful than the hypodermic and all but one of the patients who failed to be helped by the injection method was helped by the oral method.

Thirty-seven patients were treated with ragweed pollen by the hypodermic method during the same season. Thirteen (35.1 per cent) obtained an excellent result; eleven (29.7 per cent) obtained a good result; nine (24.3 per cent) obtained a fair result and four (10.8 per cent) obtained no results.

Thirty-three (40.2 per cent) patients experienced some form of reaction. In twenty-five it was gastrointestinal—mild nausea, vomiting, abdominal cramping, mild diarrhea, one or all, which, in all but three

instances, could be ameliorated by readjustment of the dosage; in the remainder, urticaria, itching skin, mild vasomotor rhinitis, angio-edema of the lips and mild chest tightness occurred singly or conjointly.

There was no change in the reagin titer of seven patients studied.

COMMENT: Since 1900, various observers have published reports on the therapeutic effectiveness of oral pollen therapy. The results have varied widely due in part to differing methods; due in some instances to differing pollen, and due in all instances to the uncontrollable factors inherent to the clinical situation. In all reports these results were never as good as those obtained by the hypodermic method when concomitant groups were treated by the two methods.

The results obtained by the authors approximately correspond to the results obtained by others reporting in the literature of the last five years. The usefulness of oral pollen therapy, therefore, is limited to those individuals who cannot accept the hypodermic method of treatment. However, before attributing good results to the pollen one should bear in mind that nonspecific therapies are followed by varying degrees of relief in about the same percentages as those reported for oral pollen therapy. Until all the factors that bring about the good results of the hypodermic method are known, such discrepancies are inevitable. C. H. EYERMANN, M.D.

MODIFIED PROTAMINE ZINC INSULIN: AN IMPROVEMENT ON MARKET PROTAMINE ZINC INSULIN

Market protamine zinc insulin has proved very valuable in simplifying the treatment and in improving the control of diabetes mellitus. It was hoped that this new slow-acting form of insulin would make it possible to control the majority of diabetic patients with a single injection daily. In the six years since protamine zinc insulin was introduced, in February 1937, much has been learned about the type of control which may be secured with it. It has been found that in 50 per cent or less of diabetic patients a single injection daily gives adequate control. These are the patients requiring forty units daily or less. In nearly all cases requiring more than forty units daily some regular or crystalline insulin is necessary in addition to protamine zinc insulin. The most widely used form of combined therapy employs a larger dose of protamine zinc insulin and a smaller dose of regular insulin given in separate injections before breakfast daily.¹ Protamine zinc insulin when given alone in daily injections exerts a practically constant effect so that the exact time of the daily injection and its relation to the intake of food is relatively unimportant. Market protamine zinc insulin, therefore, is satisfactory for controlling only the milder diabetic patients since, in severe cases it does not have sufficiently rapid activity after injection to control the blood sugar rise occurring after meals during the day.²

1. Mosenthal, H. O.: Protamine Zinc Insulin; Clinical Application, J. A. M. A. 110:87-90 (Jan. 8) 1938; Joslin, E. P.: Protamine Zinc Insulin, M. Clin. North America 22:711, 1938; Lawrence, R. D.: Zinc Protamine Insulin in Diabetes; Treatment by One Daily Injection, Brit. M. J. 1:1077, 1939; MacBryde, C. M., and Roberts, H. K.: "Three-to-One" Modified Protamine Zinc Insulin; an Improvement on Market Protamine Zinc Insulin, Proc. Central Soc. Clin. Res. 15:7-8 (November) 1942.

2. Ricketts, H. T.: Constancy of Action of Protamine Zinc Insulin, Am. J. M. Sc. 201:51 (January) 1941.

Many workers have recognized the need for a type of insulin effective for at least twenty-four hours, but with sufficient rapid activity to prevent postprandial hyperglycemia. A number of insulin modifications have been tried with the hope that one of them would prove to have, as the result of a single injection, the effect produced by separate morning injections of protamine zinc insulin and of regular insulin. A review of the literature reveals that histone zinc insulin, globin zinc insulin and clear protamine zinc insulin have given encouraging results in the hands of some workers but that, in general, market protamine zinc insulin has given better diabetic control.³ Carefully controlled comparative studies between protamine zinc insulin and globin insulin usually have shown that the latter tends to produce an excessive fall in the blood sugar from six to ten hours after injection. This has caused a marked tendency toward hypoglycemia in the late afternoon which is difficult to avoid except by giving patients a midafternoon feeding. This objection makes globin insulin unsatisfactory for the regulation of most diabetic patients.

Comparative studies between market protamine zinc insulin and histone zinc insulin⁴ have shown great similarity between the twenty-four hour blood sugar curves obtained with market protamine zinc insulin and histone zinc insulin. However, diabetic control was better with protamine zinc insulin while the histone zinc insulin failed to exhibit the desired more prompt action. Comparative curves with clear (acid or soluble) protamine zinc insulin revealed better control with the turbid market protamine zinc insulin while the clear insulin failed to give evidence of more rapid initial activity.

The most promising field proved to be in studying insulins produced by combining protamine zinc insulin and regular insulin. When protamine zinc insulin and regular insulin are mixed in the proportions employed when separately injected in the combined method of therapy, all or practically all of the insulin is precipitated. By using amounts of regular insulin equal to or greater than the amounts of protamine zinc insulin, it is possible to prepare a series of modified insulins with activities intermediate between the two insulins.⁵ The problem is therefore to choose the proportion of slow to rapid insulin activity desired. A logical approach to this seemed to be to determine what proportion of protamine zinc insulin to regular insulin is most widely useful when the two forms are injected separately for diabetic regulation.⁶ MacBryde and Roberts found that in an analysis of over two hundred diabetic patients, the proportion most widely useful in the combined therapy was three parts of protamine zinc insulin to one part of regular insulin. That is, that patients usually did best with proportions such as 30 PZI, R10; 45 PZI, R15; 60 PZI, R20.

3. Bailey, C. C., and Marble, A.: Histone Zinc Insulin, Globin Zinc Insulin and Clear Protamine Zinc Insulin: A Comparative Study of Their Action, *J. A. M. A.* **118**:683-690 (Feb. 28) 1942; Colwell, A. R.; Izzo J. L., and Stryker, W. A.: Intermediate Action of Mixtures of Soluble Insulin and Protamine Zinc Insulin, *Arch. Int. Med.* **69**:931-951 (June) 1942.

4. MacBryde, C. M., and Roberts, H. K.: "Three-to-One" Modified Protamine Zinc Insulin: Comparison with Histone Zinc Insulin, Clear and Turbid Protamine Zinc Insulin, *J. Clin. Investigation*, to be published.

5. Wauchope, G. M.: Zinc Protamine Insulin and Soluble Insulin Interaction in Combined Doses, *Lancet* **1**:962-966 (May 25) 1940; Ulrich, H.: Clinical Experiments with Mixtures of Standard and Protamine Zinc Insulins, *Ann. Int. Med.* **14**:1166-1179 (January) 1941.

6. MacBryde, C. M., and Roberts, H. K.: "Three-to-One" Modified Protamine Zinc Insulin; an Improvement on Market Protamine Zinc Insulin, *Proc. Central Soc. Clin. Res.* **15**:7-8 (November) 1942.

These workers therefore devised a form of insulin which would give as the result of a single injection, three parts slow effect to one part rapid effect. This 3:1 insulin is made by admixture of equal parts of market protamine zinc insulin and regular insulin and readjusting the pH to 7.2. For convenience they have designated this insulin "three-to-one" insulin. Studies on a large number of severe diabetic patients have shown that this 3:1 insulin gives as a rule even better diabetic control than that obtained by injecting protamine zinc insulin and regular insulin separately. The 3:1 insulin is also useful in controlling mild diabetic patients since there is only a small amount of rapid insulin action. For example, a patient receiving fifteen units of the new modified insulin would get eleven and one-fourth units slow effect and three and three-fourths rapid effect.

Studies such as these revive the hope that it will be possible to control practically all uncomplicated diabetes with a single injection of modified protamine zinc insulin daily and to improve the degree of control in the majority of cases.

CYRIL M. MACBRYDE, M.D.

SPECIAL ARTICLE

THE DOCTOR OF MEDICINE AND HIS RESPONSIBILITY

ALFRED W. ADSON, M.D.

ROCHESTER, MINNESOTA

Members of the North Central Medical Conference, representing the states of North Dakota, South Dakota, Minnesota, Wisconsin, Nebraska and Iowa, have entrusted me with the responsibility of addressing this National Conference on Medical Service concerning medical problems that are of both local and national interest.

It is the duty of every doctor of medicine to prevent illness, to supply adequate medical care to those who are ill, to perpetuate the science of medicine and to encourage medical investigation. It is true that the average physician would prefer to go unregimented among his sick and administer to their needs, irrespective of race, color, creed or financial status, rather than busy himself with administrative and political problems. However, since the courts have ruled that group health is a business and have found that medical societies are guilty of restraining trade when attempting to maintain the standards of the practice of medicine, a challenge has been issued to the medical profession: Is there a necessity for lay groups and the Federal government to take over the control of the practice of medicine?

Has the science of medicine reached its zenith? Have the men and women of medicine become so decadent that they are unable to assume their responsibilities? Are the doctors of medicine no longer able to conduct their practice without government control? Do they lack ability to appreciate their problems? Or are they incapable of constructive leadership in the solution of the numerous responsibilities that are confronting the medical profession today? The reply is, "No."

Read at the meeting of the National Conference on Medical Service, Chicago, February 14, 1943.

The science of medicine has been nurtured by men and women who have advanced the knowledge of relieving pain, correcting deformities, lowering infant mortality, prolonging life and preventing illness by sanitary and public health measures. This progress must continue if civilization is to survive.

The medical profession is conscious of social and economic changes and stands ready to cooperate with, and offer leadership to, state and Federal agencies in the solution of medical problems. It further believes that better medical service can be rendered by offering advice and leadership to welfare agencies than by serving as a tool under political bureaus.

The medical profession recognizes the necessity of state and Federal control of communicable diseases and medical services to inmates of state and Federal institutions. It appreciates its responsibility to the Armed Forces and expects to supply the needed personnel. It is willing to cooperate with welfare agencies in providing adequate medical care for the low income and indigent groups of the population; but in providing this care, it believes that the medical service is augmented when the patient-physician relationship can be maintained by permitting the patient, whenever possible, to choose his own physician. In order to protect the public from worthless, so-called medical procedures and unnecessary operations by unscrupulous individuals, it likewise believes that high standards of medical education and practice must be maintained. This applies not only to the practice of medicine in the office; it applies to the practice of medicine in the humble home or in the most modern hospital.

Although medical education begins in the medical school, it is never completed as long as the physician continues his practice. Medical schools have adopted standards of education and have required certain courses of study in order that the public might avail itself of the best practices of medicine. Medical licensing boards have protected the public further by requiring of their candidates for licensure prescribed courses of study. State laws governing the practice of medicine and conduct of physicians further protect the public from irregular practices and charlatans.

Medical societies, county, state and national, have been organized to further the education of the physician by acquainting him with the advances and new discoveries in the science of medicine. They likewise serve as administrative units in the consideration and solution of medical problems. It is obvious that the responsibilities of the respective state organizations are greater than those of the county organizations and that the national organization is charged with greater responsibilities than those of the state organizations. However, it is also obvious that the activities of all groups must be integrated if medical problems are to be solved effectively. In some states, such as Minnesota, the administrative and the legislative bodies have the confidence of the medical profession. Likewise the

medical profession has the confidence of the state administrative and legislative bodies. This confidence has made it possible for representatives of both groups to attack and solve the medical problems which are of mutual interest.

The national organization, through its respective bodies and committees, has conducted an excellent program in furthering medical education. It has crystallized the standards of medical education for the medical student as well as for the practitioner of medicine; it has investigated the claims of new and nonofficial remedies, foods and therapeutic measures and further has protected the public by approval or disapproval of the articles investigated. It has taken active steps through its Procurement and Assignment Committee in providing medical men for the Armed Forces without robbing communities of adequate medical personnel and has made provisions for relocation of physicians where more medical service is needed. It has acquainted the public with the important role that the science of medicine plays in their daily lives but, apparently, it has not gained the confidence of the national administrative and legislative bodies that some of the state medical societies have attained. The National Physicians' Committee has made some progress in acquainting the public with the necessity of medical science but it too had not obtained the confidence of the national administrative and legislative branches of our government. Therefore, the recent court decision has emphasized the weakness of conducting a program of education to acquaint the public, the administrative and legislative bodies of certain states and the national institutions with the important function of the science of medicine in our civilization. It is our duty, as physicians and citizens, to assure those in administrative positions and legislative bodies that we are familiar with the social and economic changes that have thrown greater responsibilities on the medical profession and that we stand ready to cooperate with these agencies in offering leadership in the solution of the numerous problems which non-medical personnel are trying to solve.

The chief medical problem that concerns doctors of medicine and welfare agencies is that of providing adequate medical care to those who are financially unable to procure this care. This group includes those who are indigent and those with low incomes. Medical care, in its true sense, embraces more than emergency treatment for a particular illness since it should include a rehabilitation program, such as the correction of deformities and ailments that impair the efficiency of individuals. The rehabilitation program also should include adequate and proper diets, physical training, recreation, protective clothing and housing. In most of the cities the indigent are provided with proper medical care through the charity hospitals where competent physicians give of their services. This same group in the rural districts is not always so fortunate since local welfare boards are reluctant to provide this care. It is in these situations that the physicians

have been overburdened in assuming all of the responsibilities in providing the necessary medical care. Prior to the more recent economic changes, physicians were willing to assume this obligation because those who could afford to pay for professional services attempted to meet their obligations. However, as a result of the recent social and economic changes, the government has taken over more and more control of the civilian's activities and those with moderate and low incomes have been less willing to assume their obligations of medical care and are insisting that it is the government's duty to provide medical care and that it is the individual's privilege to squander his extra change.

The problems of this group cannot be solved by physicians alone or by Federal, state and local welfare agencies alone. The physician has a joint responsibility. Conscientious leadership by physicians working in cooperation with county, state and Federal agencies can and will bring forth a solution of the problem. Medical service must be rendered and the physician is willing to give a good portion of his services. But the government must provide reasonable funds for the care of its indigent as it must provide for catastrophic illness in the low income group. Nevertheless, those who come within the low income group should likewise be made to realize that they too owe a responsibility to their local, state and Federal governments and should be encouraged and advised in budgeting their income and expense.

Industrial compensation has accomplished much in providing proper medical care and the necessities of life, during illness, for those employed in industrial institutions. However, there still remains a large group of individuals who receive moderate or low incomes and are desirous of securing the assurance of adequate medical service in the event of illness. Insurance companies have offered this protection through policies covering accident and illness disabilities but, again, this protection only partially solves the problem since many an insuree expects more for his premium than the insurer is able to give. In several states medical societies have attempted to develop medical service plans whereby the insuree may purchase from the doctors within the group full medical protection or medical protection for unexpected, serious illnesses. In some states under the farm security program, experimental medical service plans are being tested out by use in an attempt to find the solution of the problem of supplying medical care to the farmers and their families who are being rehabilitated. In some instances physicians are hired to render medical service to indigent and cooperative groups. Even though physicians, welfare agencies and low income groups are struggling with the problems of medical service plans, as yet a satisfactory plan for all classes has not been developed. The recipients expect more than the vendors can supply for the premiums paid.

These controversies give rise to discussions on the necessity of compulsory medical insurance.

Should such a program evolve, results would be disappointing from the patient's as well as the physician's points of view if placed under the control of political bureaus and the patient would be deprived of his free choice of physician.

Therefore, physicians believe that a more equitable solution of the perplexing medical problems referred to will be reached if they are permitted to consult and advise administrative officials, legislative bodies and welfare agencies, since they are more familiar with the medical needs of their respective communities than are those who have a causal knowledge of the medical necessities.

It is befitting to quote the statement found in the opinion written by Justice Miller, of the United States Court of Appeals of the District of Columbia, in the case of the United States of America versus the American Medical Association, and the case of the United States of America versus the Medical Society of the District of Columbia. The italics are mine.

"It may be regrettable that Congress chose to take over in the Sherman Act the common law concept of trade, at least to the extent of including therein the practice of medicine. Developments which have taken place during recent decades in the building up of standards of professional education and licensure, together with self-imposed standards of discipline and professional ethics, have, in the belief of many persons, resulted in substantial differences between professional practices and the generally accepted methods of trade and business. As we pointed out in our earlier decision, the American Medical Association and other local medical associations have undoubtedly made a profound contribution to this development. *However, our task is not to legislate or declare policy in such matters, but, rather, to interpret and apply standards and policies which have been declared by the legislature. That Congress did use the common law test there is no doubt. That Congress was not otherwise advised was perhaps because of the failure of the professional groups to insist upon the distinction and to secure its legislative recognition.*"

Does the medical profession of this country need a stronger invitation, or a more direct challenge to take an intelligent, helpful and fair stand in the enactment of legislation that not only concerns the public welfare but the welfare of medicine itself? Does not the medical profession of this country, as citizens and taxpayers, have a right to express its opinion in these matters before legislation is enacted and rules and regulations adopted by some bureau? I do not share the opinion that the time for the medical profession to speak up is after such things have taken place. Neither do I have the opinion that Congress would be resentful of intelligent, courageous and fair advice on such matters. What better proof can be asked than the quotation from Justice Miller's opinion that the Court is not responsible for the absence of advice from the medical profession when Congress is drafting a law.

It is not the purpose of this paper to criticize the

efforts of our national medical organization nor to criticize the efforts of the National Physicians' Committee, but it is the desire of the members of the North Central Medical Conference to express a wish that a more active program be conducted to acquaint the public, government officials and legislative bodies with the necessity of medical science and the important role it plays in our civilization. It is essential that we as physicians dispel the fear that government administrative agencies and legislative bodies have of our medical organizations and that they be assured of our cooperation in solving the social and economic problems that confront us as a nation.

The functions of acquainting the public on matters of medical interest, assisting bureaus in formulating plans on medical care and offering constructive advice on proposed medical legislation rightfully belong to the national organization known as the American Medical Association. They could be assigned to the National Physicians' Committee, or they might even be undertaken by unifying the activities of the various state committees on public policy and legislation. Representative committees could be appointed for each of the component societies, county, state and national. These all could be so integrated that national opinion and advice could be obtained and made available for committee hearings on legislation within a few hours' time. Through the national, state and county committees the entire profession could be informed of proposed medical legislation. Thus, the local constituents of the respective state and federal legislators could express their views before legislation is enacted. Some states already have medical advisory committees from each county. They also have state medical committees on public policy with a physician as part-time executive chairman assisted by legal counsel. A national committee constructed on the same plan as these state committees would have to be created. A physician who has practiced medicine should be chosen as the executive chairman. Both he and his legal counsel would need to be stationed in our national capital. The expense of the national committee on public policy could be financed by one of three agencies, the American Medical Association, the National Physicians' Committee or the respective state organizations bearing the expense jointly. It would appear more equitable if each physician would be assessed each year for the specific purpose of maintaining a national committee on public policy and legislation.

The physicians' problems are not unlike those of dentists and hospital associations. Therefore, unified effort of medical, dental and hospital associations should further the welfare of the patient.

A MAJOR MEDICAL VICTORY

In an editorial pointing out the safety of pooled human plasma (the liquid portion of the blood), *The Journal of the American Medical Association* says in its March 20 issue that "the demonstration of the surpassing value of pooled human plasma in shock has been design-

ated a 'major medical victory.'" *The Journal* points out that "from a careful analysis of extensive data, (William) Thalheimer concludes (in a recent article) that in pools of plasma or serum, agglutinins are reduced to such a low level 'that no danger can result to patients from the injection of even large doses from these pools.' Large amounts of pooled plasma are given safely without any preliminary tests for compatibility."

ARMY'S 1943 RECRUITING PROGRAM WILL REQUIRE 6,900 PHYSICIANS

The 1943 recruiting program of the Surgeon General of the Army calls for the commissioning of 6,900 physicians and approximately 3,000 hospital interns and residents, it is reported in *The Journal of the American Medical Association* for March 13 in an outline of the new procedure of processing physicians, dentists and veterinarians for the Army. The program also calls for the commissioning of 4,800 dentists and 900 veterinarians.

Physicians will be procured from the following twenty states and the District of Columbia: California, Colorado, Connecticut, Illinois, Iowa, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Vermont and Wisconsin.

It is stated that at present there will be no procurement of physicians, except interns and residents and in special cases for specific position vacancies, in those states not listed above. There will be no procurement of dentists, except special cases for specific position vacancies, in the following sixteen states: Alabama, Arizona, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia.

At the present time there are no restrictions on the recruiting of veterinarians.

In the instructions issued by the Army it is pointed out that the Surgeon General has discontinued all medical officer recruiting boards and that under the new procurement program no physician, dentist or veterinarian will be commissioned in the armed forces of the United States until he has been declared "available" by the Procurement and Assignment Service of the War Manpower Commission.

In each state the Procurement and Assignment Service has set up three state chairmen: medical, dental and veterinary. Each of these prepares a monthly quota list of physicians, dentists and veterinarians who are apparently suitable and who are available, for commissioning in the Army of the United States. This list is submitted to the central office of the Procurement and Assignment Service which sends a communication inviting such individuals to apply for service with the armed forces. On the reply card enclosed with the invitation the individual states his preference for the Army, Navy or Medical Department of the Air Forces. These reply cards are sent by the potential applicants to the state chairmen of the Procurement and Assignment Service who in turn submit lists of such potential applicants to the Officer Procurement Service of the Army.

On receipt of such lists the officer procurement district office contacts the potential applicant and arranges for an interview regarding a commission.

Applicants will be requested by the officer procurement district office to complete all papers and take all steps required of them within fourteen days of the date of such request. If this is not complied with, a report thereon will be transmitted by the officer procurement district office to the state chairman of the Procurement and Assignment Service.

The decision as to the grade and appointment to be recommended for each candidate rests with the Surgeon General, not with the Officer Procurement Service.

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APRIL, 1943

EDITORIALS

THE ANNUAL SESSION

The 86th Annual Session of the Association will be held in St. Louis, April 18, 19 and 20, at the Jefferson Hotel. The program and schedule of time and place of meetings appear on page 118.

The program arranged by the Committee on Scientific Work promises to be instructive and practical. Eight round table discussions to run consecutively through Monday have been scheduled on the following subjects: Sulfonamides, Burns, Poliomyelitis, Industrial Medicine, Syphilis, Anesthesia, Respiratory Disease, Transfusions. Discussions and questions and answers will follow short presentations on each subject. Forty exhibits by commercial companies will add to the instruction value of the Session.

The Committee on Maternal Welfare and Infant Care will hold its annual luncheon meeting Monday noon with discussions on obstetrics and pediatrics.

Past Presidents will be guests of honor at the Annual Banquet on Sunday evening at which Dr. Morris Fishbein, Chicago, will speak on "Plans for Postwar Medical Service."

The St. Louis Medical Society will be host at an entertainment and buffet dinner on Monday evening at the St. Louis Medical Society Building.

Because of the heavy demands on the time of physicians, the Session has been curtailed to two days' time, beginning Sunday afternoon and closing Tuesday noon. The Council, the Committee on Arrangements and the Committee on Scientific Work feel that the Session has been arranged so that, in spite of the shorter time, it will be an unusually valuable session. The Council and the House of Delegates will have time to deliberate on and plan toward meeting the problems that face the medical profession today and the scientific program on Monday has been arranged to give concise, practical instruction. Members who attended the Session in St. Louis in 1941 know that the St. Louis Medical Society makes an excellent host and that the Session will be enjoyable as well as profitable.

TROPICAL MEDICINE

The present war bids fair to change the character of medical practice in the United States. Aside from many economic and social changes, there will be new problems in diagnosis presented to the physician.

Through the constant vigil of the United States Public Health Service, so-called tropical disease has been kept from this country. Even the few tropical diseases which are indigenous—malaria, hookworm disease, sylvatic plague and others—have been controlled to the point that they are not serious threats to the economic life of the nation except in a few scattered regions.

However, participation in a global war opens up entirely new contingencies. A study of the Public Health Reports (57:2000-2002, 1942) reveals that for the first nine months of 1942 there were 837 cases of plague in India; 22,380 cases of smallpox in India; 34,913 cases of typhus fever in Algeria, 22,653 in Egypt, 25,666 in Morocco, and 16,152 in Tunisia. Thanks to the service of the Rockefeller Foundation, yellow fever is relatively infrequent. Only 19 cases were reported in Africa and 23 in South America. This does not, of course, mean that yellow fever might not again become an important disease. The United States has troops stationed in India, North Africa, the Southwest Pacific and in many other places. These men will be exposed to the etiologic agent or to the vector that disseminates the virus, bacterium or rickettsia of these diseases. Many of these diseases pass into a latent stage. The etiologic agent remains in the body and a month or a year later may be passed on to another person.

These facts point to the necessity of more adequate teaching and knowledge of tropical medicine in the United States. Medical schools have been asked to increase the time allotted to the subject and to give more adequate courses in parasitology and public health. When United States soldiers return from the far corners of the earth, the responsibility of diagnosing and treating the diseases they may bring back with them will fall on the medical practitioner in both the large and the small town. Would it not be well to include papers on amebiasis, yellow fever, typhus fever and similar diseases in the programs of our state and county medical societies in the next few years?

CLINICAL AND LABORATORY DIAGNOSIS OF HISTOPLASMOSIS

Histoplasmosis (reticulo-endothelial cytomycosis) was first described in 1906 by Darling¹ and by Strong. In 1908 and 1909, Darling reported two more cases, but no further cases were reported until 1926. During the last three years, however, the disease is being recognized with greatly increasing frequency, seven cases having occurred in St. Louis alone. In view of these figures, it is clear that

1. Darling, S. T.: J. A. M. A. 46:1283, 1906.

histoplasmosis must now be considered seriously in the differential diagnosis of a number of clinical pictures with which the physician frequently is confronted.

Clinically, the disease is remarkably variable in its manifestations and the predominating signs and symptoms may involve the hemopoietic system, the gastrointestinal tract, lungs, nasopharynx, skin and subcutaneous tissue or the joints.

Although the present concept of the clinical picture is broadening rapidly as *Histoplasma capsulatum* is reported in a wider variety of pathologic lesions, it is possible to outline the types of infectious disease in which the diagnosis should be considered. In infants, the majority of cases have been of the generalized type with insidious onset, prolonged irregular fever, failure to gain weight, anemia, leukopenia and enlargement of the spleen and liver. Diarrhea, vomiting, coryza and otitis media are seen frequently in the early stages and pulmonary consolidation, resulting from actual infection of the lungs by the causative organism, has occurred almost constantly in the later stages.

In adults, the disease may occur in a generalized form similar to that seen in infants, as described. The blood picture may, however, remain essentially normal. Kala-azar, miliary tuberculosis and other prolonged fevers with splenomegaly may be simulated, as well as aplastic anemia and atypical leukemoid conditions, in cases showing anemia and leukopenia. The pulmonary form of the disease may simulate pulmonary tuberculosis and has, in several instances, been associated with the latter disease. In such instances, diagnosis may be extremely difficult and may be made only at necropsy. Intestinal symptoms have dominated the clinical picture in several cases and the differential diagnosis must include the various types of ulcerative enteritis.⁴ Naso-oral ulceration has been the outstanding feature in a group of reported cases. The ulcers are of the indurated granulomatous type and may be single, multiple or confluent. In one case, a single ulcer was mistaken clinically for epidermoid carcinoma. Cutaneous lesions may occur alone or in combination with naso-oral ulceration and may be single or multiple. The lesions may appear as chronic abscesses or as discrete nodules in the subcutaneous tissue. In one reported case, the picture was that of a severe inflammatory lesion of the knee joint, resembling tuberculosis, but eventually requiring amputation.⁵

Regardless of the initial symptomatology, present evidence indicates that the great majority of cases terminate fatally in a few months because of the eventual development of generalized infection. This concept should not be regarded as established, however, until follow-up histories are available in several cases which at present are clinically well

several months after the excision of localized lesions containing *Histoplasma capsulatum*.

Definite diagnosis of the condition can be made only by laboratory methods. Although a presumptive diagnosis may be possible by a specific cutaneous test,⁶ certain diagnosis depends on the demonstration of the specific etiologic agent by culture methods, in smears or sections of tissues or exudates or by transmission to animals. The organism, which is a fungus, grows slowly on Sabaraud's agar or on dextrose blood agar. The organisms in tissues appear as rounded, doubly contoured bodies, within the cytoplasm of infected cells, and are usually present in great numbers, producing a very characteristic appearance. Diagnosis recently has been made by stained films of peripheral blood and by biopsy of lymph nodes and other accessible lesions. Bone marrow and spleen puncture may be utilized.

With the increasing recognition of this condition, which may or may not represent a true increase in the incidence of the disease, it is to be expected that methods for early diagnosis will be developed and that epidemiologic problems will be solved. The transmission of the disease to animals, particularly rats and dogs, has made it possible to evaluate therapeutic agents, and it is to be hoped that an effective method of treatment will be discovered eventually.

6. Van Pernis, P. A.; Benson, M. E., and Holinger, P. H.: *J. A. M. A.* 117:436, 1941.

NEWS NOTES

Dr. W. A. Beckemeyer, Sedalia, has been re-appointed county physician for Pettis County.

Dr. Claude E. Duckett, Lamar, has been appointed city physician for Lamar.

The offices of the Laclede County health department recently were moved into a new \$30,000 health center building in Lebanon.

Dr. William Von McKnelly, Chamois, has been appointed county physician for Osage County.

Dr. Andy Hall, St. Louis, was a guest of the Madison County (Illinois) Medical Society at Wood River, Illinois, on March 5 and spoke on "Urological Problems of the General Practitioner."

Dr. O. S. Gilliland, Kansas City, gave the graduation address when diplomas were given to the first civilian defense group in the nation qualifying as hospital aides, at Kansas City, March 3. Dr. J. R. McVay, Kansas City, presided at the meeting.

2. DeMonbreun, W. A.: *Am. J. Trop. Med.* 14:93, 1934.

3. Meleney, H. E.: *Am. J. Trop. Med.* 20:603, 1940.

4. Henderson, R. G.; Pinkerton, H., and Moore, L. T.: *J. A. M. A.* 118:885, 1942.

5. Key, J. A., and Large, A. M.: *J. Bone & Joint Surg.* 24:281, 1942.

Dr. Charles S. Johnson, Warrensburg, spoke at a meeting of a class in child care at Warrensburg on February 18. His subject was "The Sick Child."

During the first four months of operation of the branch laboratory of the State Board of Health in Sikeston, 1,457 tests for physicians in Southeast Missouri were conducted.

The National Conference on Planning for War and Post War Services was held in New York on March 15 under the auspices of the Carlos Finlay Institute of the Americas, with the cooperation of the American Medical Association, the American College of Physicians, the American College of Surgeons, the American Drug Manufacturers Association, the American Hospital Association, the American Pharmaceutical Manufacturers Association, the American Pharmaceutical Association, the American Surgical Trade Association, the Wholesale Surgical Trade Association and the National Physicians Committee. The basic theme was the mobilization of leaders of the medical profession and of the supporting industries for planning of postwar medical services.

Dr. LeRoy U. Gardner, Saranac Lake, New York, will speak on "Pneumoconiosis and Dust Hazards in Industry" at the Municipal Auditorium, Kansas City, at 8:30 p. m. on April 5. This is the second of a series of presentations on "Industrial Health" for the Greater Kansas City area. Dr. James Stewart, Jefferson City, will preside. The third of the series will be presented on April 14 with Dr. Edward C. Holmblad, Chicago, Managing Director of the American Association of Industrial Physicians and Surgeons, speaking on "Present Day Problems of Industrial Medicine." The first of the series was given on March 17 before a large audience. The series is sponsored by the Kansas City Association of Railway and Industrial Physicians and Surgeons, the Committees on Industrial, Contract and Insurance Practice of the Jackson and Clay Counties Medical Societies, the Kansas City Area Industrial Hygiene Service, the Kansas City Southwest Clinical Society and the Committee for Public Health and Welfare of the Chamber of Commerce.

DEATHS

Langsdale, John Marion, M.D., Kansas City, a graduate of the Missouri Medical College, St. Louis, 1878; honor member of the Jackson County Medical Society; Fellow of the American Medical Association; retired; aged 86; died December 22, 1942.

McIntire, John Current, M.D., St. Louis, a graduate of the University of Louisville School of Medicine, 1898; member of the St. Louis Medical Society; aged 67; died February 16.

Miller, Walter McNab, M.D., Columbia, a graduate of Cooper Medical College, San Francisco, 1895; honor member of the Boone County Medical Society; retired; aged 83; died December 13, 1942.

Poe, John D., M.D., St. Louis, a graduate of St. Louis University School of Medicine, 1903; member of the St. Louis County Medical Society; Fellow of the American Medical Association; aged 69; died February 26.

Simon, Frederick Casimir, M.D., St. Louis, a graduate of the Missouri Medical College, St. Louis, 1899; member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 64; died December 31, 1942.

Wilcoxon, Thomas Hurley, M.D., Bowling Green, a graduate of the Homeopathic Medical College of Missouri, St. Louis, 1900; member of the Pike County Medical Society; Fellow of the American Medical Association; aged 68; died January 25.

ORGANIZATION ACTIVITIES

COMMITTEE ON STUDY OF CARDIAC DISEASES

Members of the Association who are interested in the organization of a section within the Association on cardiology are asked to meet at a luncheon on Monday, April 9, at the Jefferson Hotel for the purpose of discussing the subject and helping to perfect the plans for the organization of such a section.

Because of rationing it is necessary to know in advance those who will be able to attend. Therefore, communicate with the Chairman of the Committee at once stating a desire to be present. Only in this way can the Committee make any definite plans for the coming year. It is hoped that all who possibly can will be present.

J. DEVOINE GUYOT, M.D., Chairman,
Committee on Study of Cardiac Diseases.

BUDGET FOR 1943

Salaries	\$14,520.00
Printing of THE JOURNAL.....	8,000.00
Public Relations.....	1,000.00
Defense	1,000.00
Postage	1,100.00
Postgraduate Instruction.....	1,000.00
Printing and Stationery.....	750.00
Traveling Expense.....	1,100.00
Telephone and Telegraph.....	600.00
Rent of Office and Light.....	1,100.00
Meetings:	
Annual Session.....	5,000.00
Council and Councilor's Expenses....	
Committee Meetings.....	
Delegates to A. M. A.....	
Miscellaneous and General Expenses...	700.00
	<hr/> \$35,820.00

MISSOURI STATE MEDICAL ASSOCIATION

86th Annual Session, Jefferson Hotel, St. Louis

The 86th Annual Session of the Association will convene at the Jefferson Hotel, St. Louis, Sunday, Monday and Tuesday, April 18, 19 and 20, 1943.

ANNUAL BANQUET

Sunday, April 18, 1943—7:00 p. m.—Gold Room, Jefferson Hotel

H. L. Kerr, M.D., Crane, President, Presiding

Tendered by Officers of the Association, Presidents and Secretaries of County Medical Societies, Members of the House of Delegates, Members of the Association and Their Guests, Members of the Woman's Auxiliary to Past Presidents of the Association.

Address of Welcome

—Robert Mueller, M.D., President, St. Louis Medical Society

Announcements

—Neil S. Moore, M.D., St. Louis, Chairman, Local Committee on Arrangements

Address of the President-Elect

—A. W. McAlester, Jr., M.D., Kansas City

Address of the President

—H. L. Kerr, M.D., Crane.

Introduction of Past Presidents of the Missouri State Medical Association.

Plans for Postwar Medical Service

—Morris Fishbein, M.D., Chicago, Editor, *Journal of the American Medical Association*.

GENERAL MEETING

Monday, April 19, 1943—8:30 a. m.—Gold Room, Jefferson Hotel

8:30 a. m. Sulfonamides.

Mode of Elimination.....Henry L. Barnett, M.D., St. Louis

Use in Venereal Disease.....W. S. Sewell, M.D., Springfield

Use in the Army

—Major Marvin G. Flannery, M.C., Chief of Surgical Service
Station Hospital, Jefferson Barracks.

—Captain Arie C. H. Van Ravenswaay, M.C., Chief of Section
on Internal Medicine, Station Hospital, Jefferson Barracks.

Discussion and Questions

9:20 a. m. Burns.

Physiologic Problems.....Robert Elman, M.D., St. Louis

Local Immediate Treatment....F. T. H'Doubler, M.D., Springfield

Reparative Treatment.....Earl C. Padgett, M.D., Kansas City

Discussion and Questions

10:10 a. m. Poliomyelitis.

Epidemiology, Cultivation and Transmission

—Lloyd R. Jones, Ph.D., St. Louis

Treatment.....J. Albert Key, M.D., St. Louis

Pediatrician's Viewpoint....Damon O. Walthall, M.D., Kansas City

Discussion and Questions

11:00 a. m. Industrial Medicine.

What Constitutes an Adequate Examination?

—E. C. Funsch, M.D., St. Louis

Hazards in Industry.....William L. Macon, M.D., St. Louis

Discussion and Questions

MATERNAL WELFARE AND INFANT CARE LUNCHEON

Annual Meeting

Monday, April 19, 1943—12:00 noon—Dining Room 9, Jefferson Hotel

E. Lee Dorsett, M.D., St. Louis, Chairman, Presiding

Maternal Welfare in Relation to the War

—Buford G. Hamilton, M.D., Kansas City

Remarks by:

M. L. Gentry, M.D., Director, Division of Child Hygiene, State Health Department, Jefferson City

—The Maternal Welfare Situation in Missouri

Chester J. Antos, M.D., Division of Child Hygiene, State Health Department, Jefferson City.....Infant Care in Missouri

Park J. White, M.D., St. Louis

—Various Aspects of Preventive Pediatrics

All presentations open to discussion

GENERAL MEETING

Monday, April 19, 1943—2:00 p. m.—Gold Room, Jefferson Hotel

2:00 p. m. Syphilis.

Public Health Aspects.....Joseph F. Bredeck, M.D., St. Louis

Five Day and Other Treatment.. Arthur W. Neilson, M.D., St. Louis

Discussion and Questions

2:50 p. m. Anesthesia.

Spinal.....Joe McNearney, M.D., St. Louis

Continuous Caudal... Paul H. Lorhan, M.D., Kansas City, Kansas

Discussion and Questions

3:40 p. m. Respiratory Disease.

Virus Pneumonia.....Robert Moore, M.D., St. Louis

Pulmonary Lesions of Sulfonamide

—Henry Pinkerton, M.D., St. Louis

Discussion and Questions

4:30 p. m. Transfusions.

Blood and Blood Substitutes.....Carl Moore, M.D., St. Louis

Raymond Muether, M.D., St. Louis

Discussion and Questions

ENTERTAINMENT

Monday Evening, April 19, 1943—St. Louis Medical Society Building

Entertainment and Buffet Dinner for members of the Missouri State Medical Association. St. Louis Medical Society, Host.

COMMERCIAL EXHIBITS

Jefferson Hotel

GRADWOHL SCHOOL OF LABORATORY AND X-RAY TECHNIQUE, 3514 LUCAS AVE., ST. LOUIS. BOOTH 1.

This exhibit is designed to show the latest methods of teaching laboratory technic. The following technics are shown: (1) Demonstration of Rh Agglutinin, useful in the prevention of transfusion accidents, especially in pregnancy. (2) Method of staining *Spirochaeta pallida* in tissue. (3) Method of transporting gonococcus material at a distance from laboratories. (4) Petrich's method of cultivation of *B. tuberculosis*.

M & R DIETETIC LABORATORIES, INC., COLUMBUS, OHIO. BOOTH 2.

The M & R Dietetic Laboratories, Inc., are displaying Similac, a food for infants deprived partially or entirely of breast milk; also powdered SofKurd. Mr. A. E. Brown will appreciate the opportunity to discuss the merit and suggested application of these products.

JOHN WYETH & BROTHER, 1600 ARCH STREET, PHILADELPHIA. BOOTH 3.

You are cordially invited to visit Booth 3 where representatives of John Wyeth & Brother, Inc., will be pleased to explain Phosphaljel, a new product, special medication for certain cases of peptic ulcer. There also are displayed Wyeth's Pharmaceutical specialties including Amphojel, Kaomagma, Bepron, B-Plex and various forms of Silver Picrate.

J. B. LIPPINCOTT COMPANY, WASHINGTON SQUARE, PHILADELPHIA. BOOTH 4.

Lippincott's latest medical book list includes Thorek's unique and courageous "Surgical Errors and Safeguards" in a new and greatly revised fourth edition; also important new editions of Magnuson's "Fractures," including war treatment, and Rigler's "Outline of Roentgen Diagnosis." And be sure to see the phenomenally successful Ferguson's "Surgery of the Ambulatory Patient" as well as Thorek's "Modern Surgical Technic."

THE BORDEN COMPANY, 350 MADISON AVENUE, NEW YORK. BOOTH 5.

Today, with more American babies to be fed than ever before, The Borden Company is resolved to use every available resource to maintain an unfailing supply of scientific formula foods which provide the well balanced nutrition so essential in early life. These include Biolac, New Improved Dryco, Mull-Soy, Klim, Merrell-Soule Powdered Milks and Borden's Irradiated Evaporated Milk.

MEAD JOHNSON & COMPANY, EVANSVILLE, IND. BOOTH 6.

"Servamus Fidem" means "We Are Keeping the Faith." Almost every physician thinks of Mead Johnson & Company as the maker of Dextri-Maltose, Pabulum, Oleum Percomorphum and other infant diet materials. But not all physicians are aware of the many helpful services this progressive company offers physicians. A visit to Booth 6 will be time well spent.

ELI LILLY AND COMPANY, INDIANAPOLIS, IND. BOOTH 7.

The Lilly exhibit is presented as a mark of respect for the Missouri State Medical Association. Many Lilly products are shown and attending Lilly medical service representatives will be pleased to aid physicians whenever possible.

A. S. ALOE COMPANY, 1831 OLIVE STREET, ST. LOUIS. BOOTH 8.

The A. S. Aloe Company cordially invites you to visit their booth. They have on display a complete line of American-made Stainless Steel Surgical Instruments, Surgical Supplies and Laboratory Equipment. Many new and exclusive items are shown.

THE C. V. MOSBY COMPANY, 3517 PINE BOULEVARD, ST. LOUIS. BOOTH 9.

The C. V. Mosby Company extends a cordial invitation to visit their booth where many books of timely interest are on display. Among the more than 100 titles displayed are Trueta "Principles and Practice of War Surgery," Herold "Chemotherapy of Gonococcal Infections," Majors "Fractures of the Jaws," Howles "A Synopsis of Clinical Syphilis," Barnes "Endoscopic Prostatic Surgery," Thewlis "Care of the Aged," Key and Conwell "Fractures, Dislocations and Sprains," Top "Handbook of Communicable Diseases," and Parker "Synopsis of Traumatic Injuries of the Face and Jaws."

FOLEY MANUFACTURING COMPANY, 9-11 MAIN STREET, MINNEAPOLIS. BOOTH 10.

Representatives will welcome an opportunity to demonstrate to physicians how practical the Foley Food Mill is for straining all fresh cooked vegetables and fruits for babies and adults on smooth diets. A special offer will be made to all physicians during the session.

PETROGALAR LABORATORIES, 8134 McCORMICK BOULEVARD, CHICAGO. BOOTH 11.

Physicians are cordially invited to visit the Petrogalar exhibit where a new and enlightening story on Petrogalar, an aqueous suspension of mineral oil, will be related. Beautifully colored anatomic drawings and new literature may be had upon request from our professional representatives, Mr. A. E. Nowak and Mr. I. L. Stauder, who will be in the booth.

BURROUGHS WELLCOME & CO., 9-11 E. 41ST STREET, NEW YORK. BOOTH 12.

Burroughs Wellcome & Co. presents a representative group of fine chemicals and pharmaceutical preparations, together with new and important therapeutic agents of special interest to the medical profession.

CAMERON HEARTOMETER CO., 666 W. DIVISION ST., CHICAGO. BOOTH 13.

The Cameron Heartometer Company is showing the improved Heartometer, a scientific precision instrument for accurately recording systolic and diastolic blood pressures. It also furnishes a permanent graphic record of the pulse rate, the nervous functioning of the heart, the myocardial strength, as well as the functioning of the valves. The Heartometer clearly reveals heart disturbances in both early and advanced stages and is of great value in checking the progress of medication and treatments.

SHARP & DOHME, PHILADELPHIA. BOOTH 14.

Sharp & Dohme have their display at Booth 14, featuring Lyovac Normal Human Plasma, other Lyovac biologicals and biological specialties. There is also on display pharmaceutical specialties including Sulfasuxidine, succinyl-sulfathiazole, Delvinal Sodium, Propadrine Hydrochloride products, Rabellon, Depropanex and Prohexinol. A cordial welcome awaits all visitors.

SMITH, KLINE & FRENCH LABORATORIES, FIFTH AND ARCH STREETS, PHILADELPHIA. BOOTH 15.

Benzedrine Sulfate Tablets are being featured at this exhibit. It has been said that Benzedrine Sulfate offers "a therapeutic rationale which, in its very efficiency,

cuts across the old categories." It is, therefore, useful in many widely varied fields of medicine. Won't you call upon us if you desire information about the use of this highly important compound in depressive states; as an adjunct in the treatment of alcoholism, and in postencephalitic parkinsonism, narcolepsy? One of our professional representatives will be glad to discuss with you its potentialities and possible indications in your own practice. Benzedrine Inhaler, N.N.R., "Paredrine Hydrobromide Aqueous" and Eskay's Pentaplex are also on display.

PHILIP MORRIS & CO. LTD., 119 FIFTH AVE., NEW YORK. BOOTH 16.

Philip Morris & Company are demonstrating the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches on this subject and problems on the physiologic effects of smoking.

MEDICAL PROTECTIVE COMPANY, FORT WAYNE, INDIANA. BOOTH 17.

The Medical Protective Company is represented at Booth 17 where you are invited to call. Medical Protective Service is an institution of the medical profession upon whose legal liability problems we have concentrated for forty-three years. Bring your professional liability questions and problems to Booth 17. Our representative is at your service to present our Protection Plan, to explain the peculiar relation of the physician to the law which governs your practice or to discuss any particular phase of Professional Liability in which you are especially interested.

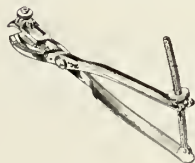
HAMILTON-SCHMIDT SURGICAL CO., 215 N. 10TH ST., ST. LOUIS. BOOTH 18.

The Hamilton-Schmidt Surgical Company, St. Louis, is represented in an Exhibit Base during the Annual Session. They are showing an interesting exhibit of surgical instruments, therefore, be sure to visit their exhibit.

THE DICK X-RAY COMPANY, 3974 OLIVE STREET, ST. LOUIS. BOOTH 19.

Due to the government demands, the factories whom we represent and the restrictions placed on the sale of certain equipment, we have a very limited display of apparatus in our booth at this time. Our representatives, however, will be glad to explain to you problems that you may have relative to your present equipment or your desire to secure x-ray, physical therapy or electrocardiograph equipment for your office or institution. If possible, we may display a Simpli-trol Electrocardiograph and several small items of x-ray equipment and physiotherapy apparatus. Please do not pass up our booth as we do want to say "hello."

J. R. SIEBRANDT MANUFACTURING CO., 3239 TROOST AVE., KANSAS CITY. BOOTH 20.



The J. R. Siebrandt Manufacturing Co. is exhibiting a complete line of fracture equipment including Thomas Splints, Pivot Leg Splint, Griswold Reduction Frame, Combination Kirschner Bows and Davidson Director for hip nailing. The feature of their exhibit is the Goodwin Bone Clamp set, showing a simple technic for wiring fractures; the entire operation, from drilling holes through fragment to the tightening of the wires, is all done with this instrument.

WINTHROP CHEMICAL COMPANY, INC., 170 VARICK STREET, NEW YORK. BOOTH 21.

The Winthrop Chemical Company, Inc., extends a cordial invitation to visit Booth 21 where representatives will gladly discuss the latest contributions made by this firm to the medical profession.

MERCK & CO., RAHWAY, N. J. BOOTH 22.

At Booth 22 ask for a copy of "The Vitamins." This booklet gives a summary of up-to-date information on the vitamins, arranged in convenient reference form. Should you be interested in a convenient anesthetic for office, home or emergency use, ask the Merck representative to tell you about Vinethene. Information on other products, including the sulfonamides, zinc peroxide and Pyridium is also available.

THE COCA-COLA COMPANY, ATLANTA, GEORGIA. BOOTHS 23 AND 40.

Coca-Cola is being served complimentary to members in attendance at the session.

DOHO CHEMICAL CORPORATION, 58 VARICK STREET, NEW YORK. BOOTH 24.

The Auralgan Exhibit consists of a model of the human auricle four feet high together with a series of twenty-four three dimensional ear drums, modelled under the supervision of outstanding otologists. Each of these drums depicts a different pathologic condition based upon actual case observation and prepared, in so far as possible, with strict scientific accuracy so as to be highly instructive and interesting to all physicians.

STORZ INSTRUMENT COMPANY, 4919 FOREST PARK, ST. LOUIS. BOOTHS 25 AND 26.

The Storz Instrument Company are showing a complete Ritter Ear, Nose and Throat Unit with Motor Chair and Ritter Fluorescent Lighting Unit. A representative of the Ritter Company will be present for demonstrations. There is also a display of eye, ear, nose and throat instruments, including the well known Storz model adenotomes and snares; also a small line of good instruments for general surgery.

WM. S. MERRELL COMPANY, LOCKLAND STATION, CINCINNATI. BOOTH 27.

A number of the newer products of Merrell research are being featured, including Ceepryn, Nitranitol and the Beta Concemin products. You are cordially invited to stop by the Merrell booth for a discussion of these and other Merrell prescription specialties.

PARKE, DAVIS & COMPANY, DETROIT. BOOTH 28.



At the Parke-Davis exhibit, which has been streamlined because of present wartime requirements, will be found many new and scientific pharmaceutical and biological products. Included in this display are such outstanding preparations as Phemerol, a nontoxic germicide and antiseptic; Vitamins, Sulfa Drugs, Despeciated Antitoxins, and a number of other products of timely interest. Able and courteous members of the Parke, Davis & Co. staff are in attendance to serve you.

CIBA PHARMACEUTICAL PRODUCTS, LAFAYETTE PARK, SUMMIT, N. J. BOOTH 29.



A cordial invitation is extended to physicians to visit Booth 29 where the various Ciba specialties are on display. To an already distinguished line of fine pharmaceuticals there has been added Biotose, a balanced combination of water-soluble vitamins together with Phytin and liver extract; Trasentine-Phenobarbital, antispasmodic and sedative combined and—our newest preparation—Privine hydrochloride, a potent vasoconstrictor. A well informed representative of the firm is in attendance to answer any questions.

S. H. CAMP AND COMPANY, JACKSON, MICHIGAN. BOOTH 30.



S. H. Camp & Company is showing a series of anatomic drawings by Tom Jones as the central theme of their exhibit. Camp Supports for Prenatal, Postnatal, Postoperative, Hernial, Sacro-iliac, Lumbosacral, Visceroperosis and other specific conditions are being shown. Experts from the Camp staff are in attendance to answer questions.

CAMEL CIGARETTES, ONE PERSHING SQUARE, NEW YORK. BOOTHS 31 AND 32.

Camel Cigarettes are exhibiting large detailed photographs of equipment used in comparative tests of the five largest selling brands of cigarettes. Representatives are available to discuss research. See for the first time the dramatic visualization of nicotine absorption from cigarette smoke in the human respiratory tract. Keep up to the minute on international news with the Camel Cigarette Trans-Lux "Flash Bulletins" while you enjoy a supply of slow-burning Camel Cigarettes.

HOLLAND-RANTOS COMPANY, INC., 551 FIFTH AVE., NEW YORK. BOOTH 33.

Contraceptive specialties are being exhibited including Koromex diaphragms, jellies, H-R Emulsion cream, and the new package, the Koromex Set Complete. This is a complete combination package ideally suited for either prescription or dispensing purposes. Hospital specialties consisting of waterproof garments and bedding, utilizing rubber substitutes, are featured.

LEDERLE LABORATORIES, 30 ROCKEFELLER PLAZA, NEW YORK. BOOTH 34.

Lederle Laboratories is again with us with an exhibit in Booth 34. For those interested in the various Sulfadiazine products (tablets, ampuls, surgical powder, solution for burns, ointment), Hemostatic Globulins, Biologics, etc., do not fail to see their representatives. Hay Fever Pollens, Vi-Delta Vitamins, Liver Extracts, B Complex (oral and parenteral), Poison Ivy products and the newer pharmaceuticals are being featured.

BILHUBER-KNOLL CORP., ORANGE, N. J. BOOTH 35.

The wartime needs of the civilian population, the Army, Navy and other governmental agencies for such important drugs as Metrazol, Theocalcin and Dilaudid hydrochloride are being met by increasing production. These "Council Accepted" prescription chemicals find an important place in wartime medicine because of their proved effectiveness and dependability. Visit us at Booth 35 for the latest information on these and other well-known drugs including Phyllicin, Euresol and Bromural.

NUTRITION RESEARCH LABORATORIES, 4210 PETERSON AVE., CHICAGO. BOOTH 36.

Nutrition Research Laboratories, Booth 36, are presenting an entirely new display which demonstrates by means of silent motion pictures, wax moulages and clinical literature, the value of Ertron in the treatment of chronic arthritis. Since this is our first visit to a meeting of the Missouri State Medical Association, we believe the medical films presented in our booth will be of extreme interest to members. Companion products which are being displayed are Bezon, whole natural Vitamin B complex in capsule form, and Pendron, the complete vitamin arch.

RIEDEL -DE HAEN, INC., 105 HUDSON STREET, NEW YORK. BOOTH 37.

With the increasing use of bile acid therapy, physicians will find it valuable to visit the Riedel -de Haen Booth 37. Representatives are especially well informed in this rapidly developing field and will welcome the opportunity to discuss the therapeutic application of Riedel -de Haen's pure bile acid products, Decholin, Degalol and Cholmodin.

H. J. HEINZ COMPANY, PITTSBURGH. BOOTH 38.

All physicians practicing pediatrics or prescribing soft diets should see the Heinz display featuring Strained and Junior Foods. Be sure to register for the 11th edition of the Nutrition Chart as well as our new Special Dietary Foods booklet and Baby's Diary Calendar.

S. M. A. CORPORATION, 8100 McCORMICK BOULEVARD, CHICAGO. BOOTH 39.

Among the technical exhibits at the convention this year is an interesting display which represents the selection of infant feeding and vitamin products of the S. M. A. Corporation. Physicians who visit this exhibit at Booth 39 may obtain complete information, as well as samples, of S-M-A Powder and the special milk preparations—Protein S-M-A (Acidulated), Alerdex and Hypo Allergic Milk.

PET MILK SALES CORPORATION, ARCADE BUILDING, ST. LOUIS. BOOTH 41.

A complete display of material illustrating the time-saving Pet Milk services available to physicians. Specially trained representatives will be in attendance to give you information about the production of Pet Milk and its uses for infant feeding. Miniature cans will be given to each physician visiting the exhibit.

FINANCIAL STATEMENT FOR 1942

R. A. LENNERTSON & COMPANY
ACCOUNTANTS
St. Louis

ROBERT A. LENNERTSON
CERTIFIED PUBLIC ACCOUNTANT

MEMBER AMERICAN INSTITUTE
OF ACCOUNTANTS

March 25, 1943.

Missouri State Medical Association,
634 North Grand Boulevard,
St. Louis, Missouri.

Gentlemen:

We have completed our examination of the accounts of the Missouri State Medical Association for the year 1942 and we have prepared therefrom the following attached statements:

- Exhibit A. Balance Sheet.
- Exhibit B. Statement of Income and Expenses.
- Exhibit C. Statement of Committee and Meeting Expenses.
- Exhibit D. Dues Receivable and Membership by Counties.

SCOPE OF EXAMINATION

The recorded cash receipts for the year were traced in total into the Treasurer's bank account as deposits. In support of the cash disbursements, we inspected checks paid by the banks, purchase invoices and other data on file. Bank balances at December 31, 1942, were confirmed direct to us by the depositaries and the petty cash fund was counted.

The asset and liability accounts as set forth in Exhibit A were compared with the records of the Association and found in agreement therewith. Income and expense accounts for the year 1942 were examined and appropriate test verifications were made. In connection with our check of advertising income from THE JOURNAL, it was noted that complimentary advertisements are occasionally inserted in order to complete pages for publication purposes.

BALANCE SHEET

The attached Exhibit A presents the asset and liability accounts at December 31, 1942, and discloses that the Association is in good financial condition.

Accounts receivable due from advertisers in the sum of \$1,201.76 were reviewed and a reserve of \$257.75 has been provided for possible bad debt losses. The bad debt charge for the year 1942 amounted to \$28.50.

Members' unpaid dues are summarized by counties in the attached Exhibit D and are classified as to age as follows:

Year 1942	\$ 2,920.00
Year 1941	672.00
Year 1940	340.00
Year 1939 and prior.....	747.00
Total	\$ 4,679.00

This entire amount is past due and is offset on the Balance Sheet by a reserve account in the same amount as the total of the unpaid dues. Dues paid in advance at December 31, 1942, in the sum of \$1,200.00 are also listed in Exhibit D.

STATEMENT OF INCOME AND EXPENSES

After providing for all ascertained expenses, the Association realized a net income of \$3,577.01, the details of which are presented in Exhibit B. A comparative summary of the income and expenses for the past three years follows:

Particulars	Year 1942	Year 1941	Year 1940
Income	\$36,589.24	\$37,119.43	\$34,595.97
Expenses	33,012.23	34,414.37	33,459.76
Net Income..	\$ 3,577.01	\$ 2,705.06	\$ 1,136.21

The books of account are maintained on the accrual basis for all accounts except members' dues which are taken into income on a cash basis as collected. No depreciation charge has been made for office furniture and equipment for the year 1942. It is the established practice of the Association to maintain the equipment account at \$1,000.00 and charge additions, if any, to expense in lieu of depreciation.

GENERAL

Fidelity bonds in force cover the Treasurer in the sum of \$20,000.00 and the Executive Secretaries in the sum of \$1,000.00 each. Office equipment and contents are covered by a fire policy in the sum of \$1,000.00.

The records of the Association were found to have been well maintained during the year in conformity with generally accepted accounting principles applied on a basis consistent with that used in the preceding period.

Yours very truly,
R. A. LENNERTSON AND COMPANY,
By R. A. Lennertson,
Certified Public Accountant.

EXHIBIT A.

Missouri State Medical Association

December 31, 1942

BALANCE SHEET

Assets		
Cash:		
Mercantile-Commerce Bank and Trust Company (Treasurer's Account).....	\$18,193.47	
Mercantile-Commerce National Bank (Secretary's Account)	416.65	
Petty Cash Fund.....	25.00	\$18,635.12
Accounts Receivable—Advertisers.....	\$ 1,201.76	
Less reserve for Bad Debts.....	257.75	944.01
Dues Receivable—Exhibit D.....		4,679.00
Furniture and Fixtures.....		1,000.00
Prepaid Expenses:		
JOURNAL Printing and Postage.....	\$ 607.30	
Advance for Traveling Expenses.....	287.15	894.45
		\$26,152.58
Liabilities		
Accounts Payable—Supplies and Expenses		\$ 970.78
Deferred Credit to Income:		
Advance Payments by Advertisers.....	\$ 140.00	
Advance Payments by Exhibitors.....	604.00	744.00
Contingent liability to members on six malpractice suits—\$1,800.00		
Reserve for Uncollected Dues.....		4,679.00
Surplus:		
Balance January 1, 1942.....	\$15,775.10	
Adjustment applicable to year 1941.....	406.69	
Total	\$16,181.79	
Add: Excess of Income over Expenses for the year 1942 per Exhibit B.....	3,577.01	
Balance December 31, 1942.....		19,758.80
		\$26,152.58

EXHIBIT B.

Missouri State Medical Association

Statement of Income and Expenses for the Year 1942

Particulars	General Activities	JOURNAL Publication	Together
INCOME:			
Dues received (includes \$1.00 per member annually for THE JOURNAL)	\$19,456.00	\$ 2,828.00	\$22,284.00
Rentals—Annual Session Exhibit Space	2,542.50	.....	2,542.50
Rent from Subtenant (office space)	540.00	.....	540.00
Subscriptions to THE JOURNAL—Nonmembers .....	.....	33.05	33.05
Advertising space—THE JOURNAL .....	.....	11,189.69	11,189.69
Total Income	\$22,538.50	\$14,050.74	\$36,589.24
EXPENSES:			
Officers' Salaries.....	\$ 3,745.33	\$ 1,872.67	\$ 5,618.00
Office Salaries.....	4,646.23	2,323.11	6,969.34
Office Rent and Light.....	1,653.70	.....	1,653.70
Postage	682.56	342.42	1,024.98
Stationery, Printing and Office Supplies.....	413.38	.....	413.38
THE JOURNAL—Paper, Printing, Mailing, etc.....	.....	7,541.44	7,541.44
Telephone and Telegraph....	729.46	.....	729.46
Insurance	101.77	.....	101.77
Fees, Taxes and General Expenses	660.37	.....	660.37
Bad Debts.....	.....	28.50	28.50
Cash Discounts to Advertisers .....	.....	459.36	459.36
Commissions on JOURNAL Advertising .....	.....	724.77	724.77
Traveling Expense—General..	508.55	.....	508.55
Committee and Meeting Expenses (Exhibit C).....	6,278.61	.....	6,278.61
Defense—Malpractice Suits..	300.00	.....	300.00
Total Expenses.....	\$19,719.96	\$13,292.27	\$33,012.23
Net Income for the Period.....	\$ 2,818.54	\$ 758.47	\$ 3,577.01

EXHIBIT C.

Missouri State Medical Association Statement of Committee and Meeting Expenses for the Year 1942			
Particulars		Amount	
Annual Session		\$ 3,311.26	
Council Meetings	\$ 662.87		
Councilors' Expenses	636.34		
Delegates to A. M. A.	425.72		
Woman's Auxiliary	87.88		
		1,812.81	
Conferences and Councilor			
District Meetings	\$ 238.79		
Control of Venereal Disease	2.55		
Industrial Health	23.78		
Maternal Welfare	37.37		
Medical Economics	137.90		
Medical Preparedness	47.65		
Mental Health	97.80		
Program Committee	87.89		
Public Relations	331.30	1,005.03	
Post Graduate Instructions:			
Speakers' Expenses	149.51	149.51	
Total		\$ 6,278.61	

EXHIBIT D.

Missouri State Medical Association
Dues Receivable and Membership by Counties
December 31, 1942

Counties	Number of 1939 Mem- bers	Dues Receivable					Pre- paid Dues
		Prior	1940	1941	1942	Total	
Andrew	9						
Audrain	16						\$ 88
Barry-Lawrence-							
Stone	37				\$ 16	\$ 16	64
Barton	6						32
Bates	10				8	8	
Benton	6						32
Boone	47				24	24	
Buchanan	106			\$ 32	96	128	16
Butler	17						
Caldwell-							
Livingston	16	\$ 16	\$ 8	8	24	56	
Callaway	16			8	8	16	
Camden	2						16
Cape Girardeau	38	8	16	16	52	92	
Carroll	9			8	32	40	24
Carter-Shannon	7				8	8	
Cass	17						80
Chariton	17						48
Christian	5						16
Clay	28	8	8	24	40	80	8
Clinton	13				8	8	
Cole	36	40	32	32	56	160	16
Cooper	14				16	24	
Dallas-Hickory-							
Polk	13						
Dekalb	2						
Dent	5						
Dunklin	23		8	24	24	56	
Franklin	24						
Gasconade-Maries-							
Osage	3	63	16	16	24	119	
Greene	105						
Grundy-Daviess	17	72	16	16	24	128	
Harrison	6	72	8	8	8	96	24
Henry	17			8	16	24	
Holt	7						
Howard	7						40
Jackson	577			28	312	340	
Jasper	63			24	108	132	
Jefferson	18		8	16	32	56	
Johnson	15						
Laclede	12				16	16	
Lafayette	29			8	32	40	
Lewis-Clark-							
Scotland	13	72	40	48	48	208	16
Lincoln	9						
Linn	13			8	40	48	
Macon	6						
Marion-Ralls	30		8	16	32	56	
Mercer	8						32
Miller	6						28
Mississippi	9						48
Moniteau	7						56
Montgomery	5						40
Morgan	3						
New Madrid	4	104	24	24	24	176	
Newton	14			16	16	32	8

Nodaway-Atchison-							
Gentry-Worth	38	32	24	64	96	216	32
North Central	35				24	24	
Pemiscot	16		8	16	32	56	
Perry	5						40
Pettis	32			16	16	32	
Phelps-Crawford	21						88
Pike	13	16	8	8	24	56	
Platte	12			8	8	16	
Pulaski	6						
Randolph-Monroe	25						
Ray	10	40	8	8	24	80	
St. Charles	28			8	16	24	
St. Francois-Iron-							
Madison-							
Washington-							
Reynolds	39				8	8	
Ste. Genevieve	5						40
St. Louis	214			8	116	124	76
St. Louis M. S.	1120	8	16	16	1232	1272	64
Saline	23				8	8	
Scott	16						104
Shelby	7	8	8	8	8	32	
South Central	32	12	12	40	60	124	8
Stoddard	7						
Taney	2	80	8	8	8	104	
Vernon-Cedar	29	24	24	36	64	148	
Wayne	4	72	32	32	32	168	
Webster	2						16
Totals	3283	\$747	\$340	\$672	\$2920	\$4679	\$1200

INCIDENTALLY

FROM THE ACTING SECRETARY

It is reasonable to assume that there should be little opposition to the passage of the "Doctor Pre-fix" bill by the present lawmakers in Jefferson City.

Congress apparently is not sold on the idea of furnishing more funds to the Children's Bureau for more grants to states in furnishing medical care for wives and infants of enlisted men.—Maybe an appropriation would be forthcoming provided such was used only for individual cases based upon an established need.

If, in addition to making out the 1942 Federal income tax return, a physician had to figure out the red tape involved, under a program of socialized medicine, there would be little time left for professional practice.

It has been stated that generally a "back sliding" in service begins when a physician quits attending medical society meetings.—The April Session of the State Medical Association offers opportunity to recover lost ground.

Organized effort offers the most logical solution to all community health problems.—Someone asked the other day if organized medicine had an objective.

One hears talk about the freedom of a patient to choose his physician.—The question of the physician's freedom to choose his patient should not be overlooked.

The patients of physicians vote for legislators.—Should not this fact be kept in mind?—The question has been asked, "Are physicians progressive?" Who should answer this?—Liberty demands responsibility.—Is it not worth the price?—To be asked to assume a few of the responsibilities in guiding medical society activities is a compliment.

The National Research Council has agreed to conduct an investigation of osteopathic schools to determine if the quality of instruction given in them is sufficiently high to justify the Children's Bureau in permitting osteopaths to participate in programs carried on under the supervision of the Bureau. This investigation has not started as yet.—Would it not be advisable for the legislature of Missouri to postpone action upon House Bill No. 85 until the National Research Council has completed its unbiased study?

Opponents of the Basic Science Bill intimated before a committee hearing March 10 that apparently the medical profession wanted this bill to eliminate competition.

MISCELLANY

ADDITIONAL MEMBERS OF THE MISSOURI STATE MEDICAL ASSOCIATION IN MILITARY SERVICE

Anderson, Merlin G., Sikeston
Bartnick, Mitchel L., St. Louis
Bauer, Joseph A., St. Louis
Camp, George, Springfield
Carrier, Edson C., Kansas City
Franklin, Max S., St. Louis
Goodman, Leroy, Kansas City
Gunn, Walter T., St. Louis
Kelling, Douglas G., Waverly
Leitz, Frank B., Kansas City
Perry, Ralph, Kansas City
Piekarski, Anthony A., St. Louis
Quirin, Warren S., St. Louis
Ready, James H., St. Louis
Sanders, Robert D., St. Louis
Senturia, Ben H., St. Louis
Stindel, Charles E., St. Louis
Webb, Paul K., St. Louis
Whitener, Paul R., Overland
Willoughby, J. B., Kansas City
Wood, George H., Carthage
Wray, Rolla B., Nevada

Through error Dr. Leslie C. Drews, St. Louis, was reported in military service.

LEGISLATION

STATE

H. B. No. 85, the osteopathic bill, which was printed in full in the March issue of *THE JOURNAL*, is still on the informal calendar of the House for perfection but no action has been taken.

Dr. Paul F. Cole, senior member of the Missouri State Cancer Commission and coplanner with the late Dr. Ellis Fischel of St. Louis, Missouri, in the state cancer

program and erection of the State Cancer Hospital at Columbia, Missouri, a state tax supported institution, where more than one thousand cases of cancer were treated last year and more than three thousand are now under observation or treatment, states that in his opinion, if osteopathic or chiropractic treatments or adjustments as defined, taught, and practiced by the founders of these schools of the healing art were put into practice in these institutions that the death rate would mount to an enormous figure. He also stated that the high standard and reputation of the cancer hospital now maintained with similar institutions of its kind in the United States and throughout the world would be jeopardized were such forms of treatment permitted.

Dr. Cole further states that in his many years of observing and treating many hundreds of cancer patients he cannot recall a single case of the mildest form of proven cancer where cure has resulted from osteopathic or chiropractic treatment.

The medical profession has for years been carrying on research in an effort to find the cause and cure for cancer and is now making enlightening progress. It is hoped in time to establish a research department in the State Cancer Hospital at Columbia, which the passage of House Bill No. 85 might prevent.

The doctor feels confident that if the members of the state legislature now in session at Jefferson City who have before them for consideration House Bill No. 85, permitting such treatment in the hospitals, will carefully investigate the basic principles and fundamentals of osteopathy and chiropractic as defined in any standard dictionary, they would not submit cancerous, tuberculous, syphilitic, and insane patients to these forms of treatment.

Committee Substitute for House Bill No. 45 providing for a laboratory serologic test for syphilis from applicants for a marriage license has been passed by the House of Representatives and was introduced in the Senate on February 11. This bill was passed by the Senate without amendment and returned to the House for confirmation of a correction in the title.

H. B. No. 299 prohibits the taking of examination to practice or granting of a license to practice the healing art except after examinations in the Basic Sciences, Anatomy, Physiology, Chemistry, Bacteriology and Pathology by a state board of examiners.

The Public Health Committee of the House held an open hearing on this bill on March 10. It was introduced into the House by Representatives Gray and Lee. Dr. Philip A. Shaffer, Dean of Washington University School of Medicine; Dr. Carl V. Moore, Associate Professor of Medicine, Washington University School of Medicine; Dr. A. B. Hertzman, Professor of Physiology, St. Louis University School of Medicine, and Dr. Robert A. Moore, Head of the Department and Professor of Pathology, Washington University School of Medicine, spoke before the Committee. They urged passage of the bill on the grounds that such a bill would promote the public health by guaranteeing a minimum knowledge of the fundamental sciences upon which all therapeutics and medical research are based. Dean Shaffer pointed out that in his opinion it would be well for the State of Missouri to have one single licensing board which would give the same examination for a license to practice any of the healing arts except those confined to prayer without the use of material remedies. Two chiropractors spoke in opposition to the bill on the grounds that it was intended to eliminate the competition of all practitioners except Doctors of Medicine. Furthermore, they asserted that the emphasis placed on the teaching of the basic sciences was different in chiropractic schools from that in medical schools. A subcommittee was appointed for further study. S. B. 98 is the corresponding bill.

H. B. 300 prohibits the use by any person licensed to practice medicine, surgery, dentistry, optometry, osteopathy, chiropractic, chiropody or veterinary surgery,

or any two or more of such professions, and any person permitted to practice the curing, healing or remedying of ailments, defects or diseases of body or mind, from using the prefix "Doctor" or "Dr." in connection with his name in any letter, business card, advertisement, prescription blank, sign or public listing or display without affixing thereto suitable words or letters designating the degree held by such person or the particular type of practice in which such person is engaged which designation shall represent the profession such person is legally authorized to practice, making violation of the Act a misdemeanor and fixing the punishment therefor, and providing that the Act shall not apply to the use of said prefix by doctors of letters, doctors of science, doctors of law, doctors of divinity or doctors of philosophy not practicing the curing, healing or remedying of bodily or mental ailments, defects or diseases. This was passed by the House and is in committee in the Senate.

H. B. No. 319 defines and regulates the practice of naturopathy; creates and provides for the appointment of a board of naturopathic examiners; prescribes the duties of such a board and the members thereof; prescribes the fees to be paid to the board by applicant for license; provides for the licensing of naturopathic physicians; provides for the registration, renewal and revocation of such license; and provides penalties for the violation of this act.

This is the same bill that was introduced in the Senate as S. B. No. 319 and was killed in Committee. It is still in the Committee on Public Health of the House.

FEDERAL

Medical Care for Wives and Infants of Enlisted Men.—On February 1, President Roosevelt submitted to Congress a supplemental estimate of appropriation for the Children's Bureau, Department of Labor, for the fiscal year 1943 in the amount of \$1,200,000. This appropriation, it was contemplated, would be used in making grants to States to provide medical nursing, and hospital maternity and infant care for wives and infants of enlisted men in the armed forces of the United States of the fourth, fifth, sixth, or seventh grades, under plans developed and administered by state health agencies and approved by the Chief of the Children's Bureau.

This supplemental estimate was referred to the House Committee on Appropriations. Later, on February 24, the Committee reported to the House of Representatives a bill, H.R.1975, making appropriations to supply deficiencies for the fiscal year ending June 30, 1943, but refused to include in the bill an authorization to cover the supplemental estimate that the President had submitted. With respect to this estimate, the Committee had this to say in its report (House Report 170):

"The Budget estimate for grants to States for maternity care of wives and infants of enlisted men of the fourth, fifth, sixth, and seventh pay ratings of the armed services is a request toward which the committee is very sympathetically inclined. It is one about which there is also urgency in some communities. Certain of the States and local communities are now handling these cases to some extent in connection with Federal grants for maternal and child health under section 502(b) of the Social Security Act and such funds have been made available during this fiscal year to the extent of approximately \$400,000. The pay of men in these ratings runs from the minimum of \$50 per month to \$78 per month. They are also entitled to dependent allowances supplemented by their pay allotments. There is unquestionably need in some areas where there are large concentrations of troops to which there has been an influx of wives from other States and communities and those needs have been met as far as possible by the services available. The committee feels that this proposal is one that needs more consideration than can be given to it by merely dealing with a sum of money in an urgent appropriation bill.

Some authority exists in connection with the Social Security Act but the funds requested are not predicated upon any existing law but are left entirely to the discretion of the Secretary of Labor and the Chief of the Children's Bureau. The committee is not informed why the proposal is to benefit only the enlisted men of these four pay grades; the presumption is that because of their low pay rates they are unable to provide these services for their wives and children. There is no requirement of lack of financial ability as a prerequisite to the benefits. Such being the case the selection of the beneficiaries in the armed forces would depend upon State or local administration. The committee feels if Congress is to embark upon a program of this type, meritorious as it may be, that basic legislation should be considered by the appropriate legislative committee, and, if enacted, the terms and conditions should be provided by law rather than left as a matter of administrative determination. The Budget estimate has therefore been eliminated without prejudice."

When the appropriation bill came before the House of Representatives for consideration, Representative Keefe, of Wisconsin, made an effort to amend the bill to include the authorization submitted by the President but the amendment was ruled out of order and H.R.1975 was subsequently passed by the House.

Appointment of Female Physicians in the Medical Corps of the Army and Navy.—S720, introduced by Senator Johnson, Colorado, and H.R.1857, introduced by Representative Sparkman, Alabama, companion bills to provide for the appointment of female physicians and surgeons in the Medical Corps of the Army and Navy. Pending respectively in the Senate and House Committees on Military Affairs.

Comment.—These bills, identical in phraseology, provide that during the present war and six months thereafter there shall be included in the Medical Departments of the Army and Navy such licensed female physicians and surgeons as the Secretary of War and the Secretary of the Navy may consider necessary, whose qualifications, duties, and assignments shall be in accordance with regulations to be prescribed by the Secretary and who shall be appointed and at his discretion removed by the Surgeon General of the Army or Navy, subject to the approval of the Secretary of War or the Secretary of the Navy. Female physicians so appointed will be commissioned in the Army of the United States or the Naval Reserve and will receive the same pay and allowances and be entitled to the same rights, privileges, and benefits as members of the Officers' Reserve Corps of the Army and the Naval Reserve of the Navy, with the same grade and length of service. Appointees may be assigned only to duty in hospitals or other stations where female nurses are employed.

Additional Benefits for Veterans.—H.R.1749, introduced by Representative Rankin, Mississippi, has been favorably reported to the House by the Committee on World War Veterans' Legislation. This bill has for its purpose the granting of medical and hospital treatment, domiciliary care, and burial benefits to any officer, enlisted man or woman, member of the Army Nurse Corps (female) or Navy Nurse Corps (female) employed in the active military or naval service of the United States on or after December 7, 1941, and before the termination of the present war.

Exemption of Military and Naval Forces from Federal Income Taxes.—Representative Sadowski, Michigan, has introduced a bill, H.R.1956, providing that every person in military or naval forces of the United States shall be exempt from all taxes imposed by the United States upon income. The bill is pending in the House committee on Ways and Means.

Compensation for Disease or Injury Sustained While Performing Civilian Defense Duty.—Senator Downey, California, by a bill introduced as S.692, and pending in the Senate Committee on Military Affairs, proposes that

all personnel engaged in civilian defense duty who sustain injury or disease while in the lawful performance of such duty shall be paid compensation, monthly, for such disease or injury so long as it may exist. The compensation to be paid, it is proposed, will be in such amounts as the President, by Executive order, may prescribe and will be paid in the manner and by the agency determined by him.

INVALID DIETS AND FOOD RATIONING

Of interest to all who are concerned with diets for invalids is Ration Order 13, issued by the Office of Price Administration under date of February 9, 1943. This order covers all canned, dried and frozen fruits and vegetables. Article II, Section 2.5 of the order reads as follows:

"Consumers who need more processed foods because of illness may apply for more points. (2) Any consumer whose health requires that he have more processed foods than he can get with War Ration Book Two, may apply for additional points. The application must be made on OPA Form R-315, by the consumer himself or by someone acting for him, and may be made in person or by mail. The application can be made only to the board for the place where the consumer lives. He must submit with his application a written statement of a licensed or registered physician or surgeon, showing why he must have more processed foods, the amounts and types he needs during the next two months and why he cannot use unrationed foods instead. (b) If the board finds that his health depends upon his getting more processed foods, and that he cannot use or cannot get unrationed foods, it shall issue to him one or more certificates for the number of points necessary to get the additional processed foods he needs during the next two months."

The application form referred to, OPA Form R-315, is apt to be somewhat confusing to patients. It is titled "Sugar Special Purpose Application" and was developed primarily to meet the need for home canning. It is being used temporarily until a more adequate form can be gotten out. It is anticipated that the procedure indicated in Section 2.5 may be changed somewhat in the future, in which case due notice will be provided.

CORRESPONDENCE

OBSTETRIC CARE

The State Board of Health
of Missouri

Jefferson City, Mo.
March 10, 1943.

To the County Medical Society Secretary:

May I request of you, as "Eligibility Officer" for the program initiated by the State Board of Health to render financial aid to the dependents of men in the armed forces for defraying expenses for obstetric and pediatric care, to portray to the various members of the county medical society, of which you are secretary, the following information:

1. The program for financial assistance has been definitely closed because funds provided by the Federal government to be disbursed through the State Board of Health in this program have been exhausted.

2. Assure the doctors, who have had applications accepted and approved for care and for hospitalization that such cases have had funds allocated for payment on a case basis. As delivery is completed and form C.H. 22 executed and forwarded to the Division of Child Hygiene, payment for that case will be made on the

certificate of the physician on form C.H. 22 and on the number of prenatal visits reported by the physician.

3. Hospitalization for those cases accepted for obstetric care, their hospitalization will be paid on a per case basis as outlined above.

4. Please convey to the various members of your society the fact that no future applications will be accepted for payment under this program and that those patients whose applications are being held in our office should be notified that the program has officially been closed in Missouri.

5. There are at the present time approximately 200 applications being held in the office of the Division of Child Hygiene, awaiting approval subsequent to receiving additional funds. With this hope apparently lost, each doctor whose case is in this office will be notified so that other financial arrangements may be made on the physician-patient basis.

Please convey to the members of the society the appreciation of the State Board of Health for their whole-hearted participation in this program. It is also my desire that you explain to the society my regrets that such a program as this, which showed a definite need in these war times to bridge the gap of sudden home and financial upheaval created by men entering the armed forces, must necessarily be discontinued.

Again may I express my thanks to you, and to your society for its whole-hearted cooperation in things pertaining to the State Board of Health.

Yours very truly,

JAMES STEWART, M.D.

State Health Commissioner.

MLG:ht

URGES TURNING IN OF ALL QUININE NOT NEEDED TO TREAT MALARIA

A plea for physicians of the United States to turn in to the National Quinine Pool all supplies of quinine is contained in *The Journal of the American Medical Association* for March 13. *The Journal* says:

"Every physician is urged to contribute to the National Quinine Pool all supplies of quinine and other cinchona salts and alkaloids not absolutely essential in his practice for the treatment of malaria. These compounds are needed to maintain an adequate stockpile of antimalarial agents for use in the armed forces. Although synthetic substances such as atabrine are being produced in enormous quantities and are used wherever possible, there are many conditions for which the drug of choice is quinine. Until the war is over little cinchona bark of good quality will be forthcoming. The currently available barks from South America are of a low grade and sufficient only for the manufacture of totaquine, which is satisfactory for domestic use. The provisions of conservation orders M-131 and M-131A essentially restrict the sale, transfer, delivery or use of quinine salts and alkaloids to the treatment of malaria. Quinidine is an exception which may be used in the treatment of certain heart conditions. Such restrictions will permit physicians to contribute unused and opened quinine supplies to the National Quinine Pool, care of the American Pharmaceutical Association, 2215 Constitution Avenue, Washington, D. C. Each package received will be tested for identity, pooled and assayed. The less common salts will be processed to quinine sulfate or hydrochloride. The materials needed are bulk cinchona salts and alkaloids, tablets, capsules and pills; quinine, quinidine, cinchonine and cinchonidine. Do not send preparations of quinine or other cinchona derivatives in combination with other medicinal agents; ampules and parenteral medication; liquid preparations or quinine and urea hydrochloride, quinine and urethane, quinine bismuth iodide, elixir iron, quinine and strychnine and similar preparations. The armed forces need all available quinine. Any contribution, no matter how small, will be useful; the need is urgent."

COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL 1943

(SOCIETIES WHICH HAVE PAID DUES FOR ALL MEMBERS AND DATE PLACED ON HONOR ROLL)

HONOR ROLL

Perry County Medical Society, November 24, 1942.
Benton County Medical Society, November 27, 1942.
Chariton County Medical Society, November 28, 1942.
Camden County Medical Society, December 3, 1942.
Miller County Medical Society, December 3, 1942.
Barton County Medical Society, December 4, 1942.
Scott County Medical Society, December 8, 1942.
Montgomery County Medical Society, December 9, 1942.
Moniteau County Medical Society, December 14, 1942.
Cass County Medical Society, December 17, 1942.
Ste. Genevieve County Medical Society, December 21, 1942.
Howard County Medical Society, December 24, 1942.
Webster County Medical Society, December 29, 1942.
Carter-Shannon County Medical Society, January 7, 1943.
Clinton County Medical Society, January 15, 1943.
Macon County Medical Society, January 28, 1943.
Dallas-Hickory-Polk County Medical Society, February 3, 1943.
Holt County Medical Society, February 24, 1943.
Pulaski County Medical Society, February 26, 1943.
Newton County Medical Society, March 5, 1943.
Morgan County Medical Society, March 10, 1943.

ASSOCIATE EDITORS: COUNCILORS OF THE
TEN COUNCILOR DISTRICTS

FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR
Clinton County Medical Society

The Clinton County Medical Society met at Gower for a dinner meeting on January 12. A business meeting followed the dinner.

Those present were Drs. A. O. Gilliland and M. L. Peters, Cameron; W. B. Spalding, S. D. Reynolds and P. M. Steckman, Plattsburg and E. B. Dunkeson, La-throp.

W. B. SPALDING, M.D., Secretary.

Nodaway-Atchison-Gentry-Worth Counties Medical Society

The Nodaway-Atchison-Gentry-Worth Counties Medical Society held a dinner meeting at the Linville Hotel, Maryville, February 1, with the vice president, Dr. William M. Wallis, Jr., Maryville, presiding.

Members present were Drs. Eugene Crowson, Pickering; Charles W. Kirk, Hopkins; Charles T. Bell, J. A. Bloomer, Hiram Day, Leslie E. Dean, Robert C. Person, William M. Wallis, Jr., Maryville; Charles D. Humbert, Barnard; Henry C. Bauman, Fairfax; Charles T. Settle, Rock Port, and Samuel E. Simpson, Stanberry. Guests attending were Dr. J. Dewey Bisgard, Omaha, and Drs. E. A. Miller, Jesse Miller and D. J. Thomas, dentists, Maryville.

Dr. J. Dewey Bisgard, Omaha, read a most interesting personal letter from Capt. Emmet B. Settle, member of the Society now in service in the Army of the United States and stationed abroad, recounting observations of some of the newer and quite revolutionary developments in traumatic surgery which have been learned from experiences with violent bodily injuries, and gave some discussion to the measures mentioned in the letter.

Dr. Bisgard read an excellent paper on "The Cancer-Ulcer Problem of the Stomach," illustrated with skiagrams and lantern slides of color photographs. He has much enthusiasm for a wide and radical resection of the gastric wall in most peptic ulcer cases when there is not quick healing response to medical management.

Dr. Bauman was appointed to make arrangements for a program at the scheduled meeting of April 5.

CHARLES D. HUMBERD, M.D., Secretary.

SECOND COUNCILOR DISTRICT

H. B. GOODRICH, HANNIBAL, COUNCILOR

Randolph-Monroe County Medical Society

The Randolph-Monroe County Medical Society met February 11 in the Jones Drug Store, Moberly.

It was voted to remit the dues of the men in the armed forces. The names included were Major M. P. Hunter, Army Air Force Basic Flying School, Garden City, Kansas; Capt. J. Will Fleming, Station Hospital, Fort Leonard Wood; Capt. W. M. Kitchen, 3001 Louisville St., El Paso, Texas.

A letter was read from Mr. T. R. O'Brien, Executive Secretary, Community Health League, explaining a bill introduced in the Legislature by Rep. C. E. Still.

Dr. F. A. Barnett, Paris, gave an interesting description of polycythemia vera. He had expected to exhibit a patient but the patient was unable to attend. There was some discussion on this rather rare disease after which the meeting adjourned until March 2.

Those present were Drs. R. H. Williams, T. S. Fleming, C. C. Smith, R. D. Streeter, L. E. Huber, O. O. Ash and F. L. McCormick, Moberly; J. P. Allen, Cairo; M. C. McMurphy and F. A. Barnett, Paris; P. V. Dreyer, Huntsville.

F. L. MCCORMICK, M.D., Secretary.

SIXTH COUNCILOR DISTRICT

A. J. CAMPBELL, SEDALIA, COUNCILOR

Henry County Medical Society

The Henry County Medical Society met at Clinton on February 25.

The following officers were elected: President, Dr. S. W. Woltzen, Clinton; secretary, Dr. R. S. Hollingsworth, Clinton; delegate, Dr. G. S. Walker, Clinton.

Matters concerning medical conditions were discussed.

R. S. HOLLINGSWORTH, M.D., Secretary.

EIGHTH COUNCILOR DISTRICT

WALLIS SMITH, SPRINGFIELD, COUNCILOR

Newton County Medical Society

The Newton County Medical Society met on February 23.

The following officers were elected: President, Dr. R. C. Lamson, Neosho; vice president, Dr. T. B. Duemler, Seneca; secretary-treasurer, Dr. J. A. Guthrie, Neosho; delegate, Dr. D. A. Campbell, Neosho; alternate, Dr. C. C. Cardwell, Stella; censor, three year term, Dr. J. L. Edmonson, Stella.

Dr. D. A. Campbell, Neosho, was made a member by transfer from the Ray County Medical Society.

Dr. G. C. DeBolt was elected a member by transfer from the Union County (Arkansas) Medical Society.

J. A. GUTHRIE, M.D., Secretary.

TENTH COUNCILOR DISTRICT

E. J. NIENSTEDT, SIKESTON, COUNCILOR

Scott County Medical Society

The Scott County Medical Society met in the City Hall, Sikeston, February 10. The meeting was called to order by the president, Dr. G. W. H. Presnell, Sikeston.

Members present were Drs. G. W. H. Presnell, H. A. Dunaway, A. A. Mayfield, E. J. Nienstedt, H. S. Miller, Sikeston; George A. Sample and W. O. Finney, Chaffee; J. A. Cline, Oran.

The Society unanimously passed a resolution instructing the secretary to telephone the Representative from the district on the Public Health Committee of the Legislature asking him to oppose the bill authorizing osteopaths to practice in tax-maintained hospitals; also to send a telegram to the Committee notifying it of the action.

The Society endorsed a premarital blood test bill.

The maternal and infant care program for wives and children of noncommissioned men in service was discussed at length.

Plans for emergency medical service for the Civilian Defense Program were discussed.

The next meeting is scheduled for April 7 at which time a program on "Gastric Ulcers" will be presented.

W. O. FINNEY, M.D., Secretary.

Dunklin County Medical Society

The Dunklin County Medical Society met at the office of Dr. E. L. Spence, Kennett, February 3.

The following officers were elected: President, Dr. L. C. Wilson, Kennett; vice president, Dr. W. J. Rutledge, Campbell; secretary and treasurer, Dr. E. L. Spence, Kennett; board of censors, Drs. S. E. Mitchell, Malden, G. R. Presnell and Paul Baldwin, Kennett.

The FSA medical plan and procurement and assignment service were discussed.

Those present were Drs. E. L. Spence, Paul Baldwin, U. A. V. Presnell, G. R. Presnell and L. C. Wilson, Kennett; Van H. Bond, Hornersville; W. J. Rutledge and W. A. Belsey, Campbell.

E. L. SPENCE, M.D., Secretary.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

President, Mrs. Frank N. Haggard, San Antonio, Texas.

President-Elect, Mrs. Eben J. Carey, Milwaukee, Wisconsin.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

President, Mrs. Frank L. Davis, St. Louis.

President-Elect, Mrs. R. C. Haynes, Marshall.

Adviser, Dr. Herbert L. Mantz, Kansas City.

The Annual Meeting of the Woman's Auxiliary to the Missouri State Medical Association will be held April 18 and 19 with headquarters at the Coronado Hotel, St. Louis.

On Sunday afternoon, April 18, at 2:00 p. m., the Pre-Convention Board Meeting will be held in the Pine Room.

The General Meeting will be called to order Monday morning, April 19, at 9:00 a. m., in the Crystal Room.

A luncheon will be held in the Club Caprice Ballroom on Monday, April 19, at 1:00 p. m., with the following guests invited: Mrs. Frank N. Haggard, San Antonio, Texas, President of the Woman's Auxiliary to the American Medical Association; Mrs. Forrest C. Donnell, Jefferson City, First Lady of Missouri; Dr. Herbert L. Mantz, Kansas City, Adviser to the Woman's Auxiliary; Dr. H. L. Kerr, Crane, President of the Missouri State Medical Association; Dr. A. W. McAlester, Jr., Kansas City, President-Elect of the Missouri State Medical Association; Dr. Robert Mueller, St. Louis, President of the St. Louis Medical Society. Past presidents of the Auxiliary and wives of guest speakers will be guests.

The Post-Convention Board Meeting will be held in the Pine Room at 3:00 p. m., April 19.

Other plans for entertaining out of town members are in the making.

MRS. FRANK L. DAVIS, President.

BOOK REVIEWS

ROENTGEN TREATMENT OF DISEASES OF THE NERVOUS SYSTEM. By Cornelius G. Dyke, M.D., F.A.C.R., Associate Professor of Radiology, College of Physicians and Surgeons, Columbia University, Director, Department of Radiology, Neurological Institute of New York, and Leo M. Davidoff, M.D., F.A.C.S., Chief, Department of Surgery, Attending Neurological Surgeon, Jewish Hospital of Brooklyn. With twelve Engravings, seven Charts and sixteen Graphs. Philadelphia: Lea & Febiger. 1942. \$3.25.

This is an excellent volume that discusses radiation in diseases of the nervous system and is a book that should not only be read by the radiologist and neurosurgeons but also by the general practitioner.

The book is divided into two parts; first, the experimental evidence of the effect of radiation on normal nervous tissues which consists of experimental evidence in the use of both radium and x-ray on normal tissue as well as a very complete review of the literature.

The second part of the book deals with the effect of radiation on pathologic processes affecting the nervous system. A complete review of the literature is made with an extensive bibliography. This is followed by technical consideration describing the technic of several outstanding radiologists who have had a rather exten-

sive experience in the treatment of pathologic processes of the nervous system.

The results of treatment of these lesions have been divided into, first, tumors; second, infectious and inflammatory diseases of the nervous system; third, spinal cord tumors; fourth, extradural spinal cord tumors; fifth, syringomyelia and, sixth, miscellaneous conditions of the nervous system.

Sound judgment has been used in measuring the effect of radiation treatment and enthusiasm has not exceeded the mature judgment of the authors and this book will serve to restore this valuable form of therapy to its proper place.

I. H. L.

TABLES OF FOOD VALUES. By Alice V. Bradley, M.S., Associate Professor of Nutrition and Health Education, State College, Santa Barbara, California. Completely Revised and Enlarged. Peoria, Illinois: The Manual Arts Press. 1942. Price \$3.50.

The tables and recipes in this book are valuable both as to content and method of presentation. The inclusion of recipes is a good addition as they usually are omitted in this type of book. Since recipes are so variable it is desirable to include them when one is considering the food value of prepared dishes. It would be easier to find the composition of foods if they were arranged alphabetically, although it makes comparison between different foods simpler as they are now grouped, that is, according to classes.

Chapter I might well have been omitted as it contains nothing of value pertaining to such a textbook. In addition, the chapter is too brief to be of benefit to anyone desiring information on the many topics it contains. Anyone using as detailed tables as make up the body of the text would also have little use for the information in Chapter II. The suggested menu on page 28 is inadequate. There is no value in knowing the composition of foods and then including a suggested menu which is so indefinite that an unbalanced diet easily could be the result. In table F the foods containing protein, calcium and iron are not given proper value. The arrangement of the foods gives no indication as to the relative value of the different foods as sources of protein, calcium and iron. For example, under the list of protein foods meats are included in the same table as bread, whereas it requires eleven slices of bread to give the same amount of protein obtained from one serving of liver.

If the text contained just the information the title suggested it would be a valuable addition to the library of anyone desiring detailed information regarding the composition of foods.

M. M. B.

STARLING'S PRINCIPLES OF HUMAN PHYSIOLOGY. Edited and Revised by C. Lovatt Evans, D.Sc., F.R.C.P., F.R.S., LL.D. Birmingham. Jodrell Professor of Psychology in University College, London. The Chapters on the Special Senses Revised by H. Hartridge, M.A., M.D., Sc.D., F.R.S., Professor of Physiology at St. Bartholomew's Medical College. Eighth Edition with 673 Illustrations, seven in Colour. Philadelphia: Lea & Febiger. 1941. Price \$10.00.

It is astonishing to find anyone at this time of rapid advancement in all of the sciences with the temerity to attempt the revision of a textbook on physiology. With almost daily revelations in the fields of chemistry, physics, biochemistry and biophysics, such is indeed an audacious undertaking and one well done.

The revisers call this volume a textbook. It would seem more of a reference volume. There is no dirth of laboratory and experimental detail within its covers. Yet the text is readable and for a book of its kind does not become boresome.

Of especial interest are the sections on biophysical principles, those passages relating to membrane ten-

sions, ionization of tissues and the electric potentials of colloids.

The special senses are exceptionally well treated. Each subject is almost a textbook adequate for a specialist.

The section on endocrinology and reproduction receive to my mind a space not commensurate with their importance to the human physiology. The chapter on heredity is too short but interesting. It is a reference volume.

F. I. R.

CLINICAL LABORATORY DIAGNOSIS. By Samuel A. Levinson, M.S., M.D., Director of Laboratories and Pathologist, Research and Educational Hospitals, Chicago, Illinois, Professor of Pathology and Assistant Professor of Medicine, University of Illinois College of Medicine; and Robert P. MacFate, Ch.E., M.S., Ph.D., Assistant Director of Laboratories, Research and Educational Hospitals, Chicago, Illinois; Assistant Professor of Pathology, University of Illinois College of Medicine. Second Edition, Thoroughly Revised. Illustrated with 156 Engravings and 15 plates. Philadelphia: Lea & Febiger. 1943. Price \$10.00.

While there are many books on clinical pathology, the laboratory worker, whether laboratory director, teacher or technician is always on the lookout for a new one. He knows he will find that "something new has been added," for laboratory methods are always advancing. In this second edition of Levinson and MacFate more than a hundred pages have been added bringing the text up to over 950 pages. Even at that length the work is most concisely written and no padding will be found to confound the technician who wants to work from an understandable, simple text. This book covers completely all laboratory procedures for diagnostic purposes, even including tests applicable to legal medicine and toxicology. The newer chemical methods are brought up to date, as well as advances in hematology. In brief, this book is one that the laboratory worker can purchase with full confidence that he has the latest word on all forms of laboratory diagnosis.

R. L. T.

PRACTICAL SURVEY OF CHEMISTRY AND METABOLISM OF THE SKIN. By Morris Markowitz, M.D., Associate in Dermatology and Syphilology, Graduate School of Medicine, University of Pennsylvania. Dermatologist to: St. Luke's and Children's Medical Center; St. Christopher's hospital, Philadelphia. Diplomate of the American Board of Dermatology and Syphilology; Fellow of the American Academy of Dermatology and Syphilology. Philadelphia: The Blakiston Company. 1942. Price \$3.50.

Of the 196 pages of this text, twelve are devoted to index, one to Caspari's recommendation of an acid diet in malignancy ("Acidity is preventive of cancer, while alkalinity favors it"), one to steatorrhea, which has no pertinence to dermatology, twenty-six to a well spaced bibliography and eight to chapter titles, leaving some 150 pages which average under 200 words apiece. With these 30,000 words, Markowitz briefly discusses "Chemistry of the Skin" ("Organic chemistry is that of the carbon atoms"); "Hematology" ("Hematology has assumed a very important position in the practice of dermatology"); "Blood Chemistry" ("Eczema, urticaria, the pyoderms and psoriasis show a relatively high percentage of glucose in the blood"); and "Vitamins in Dermatoses" (herpes zoster "is not a clearly defined vitamin deficiency per se").

The author seems to have read papers diligently, especially some of the more eerie Continental ones. Little practical discrimination is evidenced in his selection of material. Proof reading is not clean. If the reviewer must grade this offering, I suggest A for effort and D for achievement.

R. L. S., Jr.

FIRST AID TO THE INJURED AND SICK. An advanced Ambulance Handbook. Edited by Norman Hammer, M.R.C.S., Major, late R.A.M.C., T.A., Hon. Life Member, Examiner and Lecturer, St. John Ambulance Association, County Surgeon, St. John's Ambulance Brigade, etc. Eighteenth Edition. 215th Thousand. Baltimore: The Williams & Wilkins Company. 1941. Price \$2.00.

It was in 1901 that Warwick and Turnstall's "First Aid" was first published in London, and the fact that an eighteenth edition, 215th thousand, was necessary, is concrete evidence of the popularity and usefulness of the book. While the American Red Cross First Aid Textbook, written in simple language so as to be readily understood, is intended mainly for the layman, this book, including as it does the usual first aid subjects, is more comprehensive and serves rather as a standard book of reference for first aid instructors and as an advanced ambulance handbook. As an auxiliary textbook, teachers in this country likewise will find this book helpful when conducting first aid courses.

As a handbook of first aid, the book describes the principles, procedures and treatment as applicable to the subject in general and, in this edition which has been greatly revised, the author aims to adapt these principles to the special necessities of wartime first aid, for the wounded or the victims of air raids, and hopes that the edition will be of interest and assistance to the civil defense workers.

The first part of the book deals with the form and functions of the body. The second part is devoted more specifically to the subject of first aid and includes chapters on war gases, the use of respirators (gas masks), decontamination, air raid casualties and mobile first aid units. In the main there is general agreement as to methods of handling and treatment between this book and the "Red Cross First Aid Textbook," though while the former in dealing with the case of fractures advises gentle handling and immobilization by the application of splints with no special attempt at reduction or traction, the latter stresses the advisability of early reduction and traction in order to prevent additional trauma during transportation and thus more readily to promote healing.

The book although it comprises some 336 pages is small and compact and may be carried in the pocket. The subject matter is arranged concisely and systematically and the text is elucidated by numerous and well chosen illustrations. The descriptions, definitions and directions for treatment are quite to the point and are so paragraphed and tabulated that a summary of any special subject is readily at hand. A comprehensive index of subjects adds to its value as a first aid reference book.

W. C. G. K.

MANUAL OF STANDARD PRACTICE OF PLASTIC AND MAXILLOFACIAL SURGERY. Prepared and Edited by the Subcommittee on Plastic and Maxillofacial Surgery of the Committee on Surgery of the Division of Medical Sciences of the National Council, and Representatives of the Medical Department, U. S. Army, Robert H. Ivy, Chairman. With Contributions by John Scudder and Frederick P. Haugon. Philadelphia and London: W. B. Saunders Company. 1942. Price \$5.00.

This is a well written and informative text of 431 pages. It is divided into four sections.

The portion devoted to "Reconstructive Surgery" has concise descriptions and illustrations of plastic repair of the various traumatic defects of the lip, cheek and jaw. It is valuable for both civil and military problems. There is no prolixity present, but the best and quickest methods of repair are well presented. It has excellent presentation on the methods of nerve and muscle reanimation of the face. There is a comprehensive chapter on blepharoplasty which excels that seen in books on eye surgery.

The section on "Maxillary Surgery" is a good manual for military use. The first aid and later treatment of gunshot wounds of the maxilla are described. There is an excellent description and illustrations of the wiring of jaws for bullet injuries and fractures and many photographs of various ingenious dental splints that may be used.

The chapter on "Maxillofacial Prosthesis" has profuse photographic illustrations of intra-oral prosthesis for the relief of distorted facial contours and loss of tissue. Methods are described for molding and supplying extra-oral prosthesis for defects of the head, substituting for loss of the nose, ear and eye.

"Anesthetic Technics" is nicely illustrated to show methods of local anesthesia about the head. This is valuable for both the general and oral surgeon.

L. H. P.

Cabot and Adams PHYSICAL DIAGNOSIS. By F. Dennette Adams, M.D., Instructor in Medicine, Harvard Medical School, Courses for Graduates, Physicians, Massachusetts General Hospital. Thirteenth Edition. A William Wood Book. Baltimore: The Williams & Wilkins Company. 1942. Price \$5.00.

This book has passed through thirteen editions during the last forty years. This edition has been revised thoroughly with many changes and new illustrations which serve to keep it up to date. It maintains its convenient size by conciseness and terse descriptions well amplified by illustrations. The important features of the various diseases have been carefully selected and the descriptions of physical signs together with the technic of eliciting them is excellent. The book is designed primarily for medical students but can also be recommended for the clinician as a ready reference work.

R. V. P.

A TEXTBOOK OF GYNECOLOGY. By Arthur Hale Curtis, M.D., Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecological Service, Passavant Memorial Hospital, Chicago. Fourth Edition, Reset with 401 Illustrations Chiefly by Tom Jones. Philadelphia and London: W. B. Saunders Company. 1942. Price \$8.00.

It seems almost presumptuous for anyone to attempt to review a book on which the author has spent years of labor and endless hours of planning and revision, after a simple reading of the text. Yet the degree of excellence of this treatise on gynecology makes it a pleasure and a privilege to report, however sketchily, on its contents.

One of the most refreshing aspects of this volume is to find so frequently interspersed in the text the author's personal reaction to any given subject. This brings the book close to its reader and makes an understanding of the written word clearer and more vivid.

Again, the concise manner of presentation, as exemplified in the short snappy chapters on endocrinology and menstruation, are definitely superior to the usual prolonged discussion of confusing moot questions and excursions into the realm of pure speculation. It is with satisfaction that one notes the skeptical attitude toward the obtaining of repeated endometrial biopsies.

The pages included in Chapter 25 are well worth reading carefully as they make the picture very clear and introduce the excellent discussion of displacements and relaxations in a most adequate and satisfactory manner. Again in common with so many other chapters in the book, the discussion of cancer is clear and to the point. Especially recommended for the student is the opening paragraph of Chapter 21 dealing with carcinoma of the body of the uterus. Such bits of terse comment on a subject so vital at once put the reader on the alert for the excellent text that is to follow.

Throughout the book the tie-up with obstetrics and its relation to the gynecologic subject matter at hand is most interesting and instructive. This tie-up is especially valuable for student consideration, and when interspersed in a text of such length and complexity cannot be commented on too highly.

It is obviously impossible to cover adequately chapter and verse in a short review of this kind. Each subject discussed by Dr. Curtis is presented most expertly and the whole book has a well rounded and balanced character which makes it complete within itself, and a sufficient guide for student and practitioner alike.

One small bit of dissent should be permitted for its tempering sake. It seems that there is still found here, as in practically all textbooks, a disposition to spread out, however briefly, into fields beyond the confines which the title of the book suggests. Subjects which are discussed in a few lines or a paragraph could easily be omitted, as they are better covered in texts in their special fields. Again, the anatomy of the female pelvis, covering some seventy-eight pages, while most excellently presented, still seems out of proportion in a treatise of this kind. After all, a study of detailed anatomy in a textbook of nonoperative gynecology does seem superfluous.

One should not close a review of this book without a word of praise for the magnificent colored plates which illustrate the text. The student should feel a sense of the presence of the actual specimen when viewing these splendid pictures.

E. F. S.

COUNCIL ON PHARMACY AND CHEMISTRY of the American Medical Association for 1941. With the Comments that have appeared in *The Journal*. Annual Reprint of the reports. American Medical Association, 535 North Dearborn Street, Chicago, 1942.

The Council on Pharmacy and Chemistry recently issued the thirty-third edition of the *Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association*. This volume contains in compact form not only the reports of the Council which have been published in *The Journal* during the last year but also some additional reports which were not considered of sufficient importance to be published in *The Journal*. The reports may be divided into four classes: Reports rejecting products as not being acceptable for inclusion in *New and Non-official Remedies*, reports omitting from *New and Non-official Remedies* products that have previously been accepted, reports on the nomenclature of various substances and reports in which the Council gives decisions of general interest or summarizes the latest scientific knowledge concerning certain topics. The last classification includes the largest number of reports. One article deals with the developments in bacteriophage therapy since the previous report of the Council in 1934. Other reports bring to the present day the status of such products as aluminum hydroxide preparations, antipneumococcic serums, cyclopropane, human blood plasma and serum, human convalescent poliomyelitis serum, human convalescent mumps serum and sulfadiazine. Such topics as ion transfer (iontophoresis), halogenated vegetable oils for bronchography and the problem of lipid pneumonia and the sympathomimetic amines as epinephrine substitutes are discussed. The nomenclature reports deal for the most part with the Council's adoption of nonproprietary designations for comparatively new products such as diethylstilbestrol, menadione and sulfadiazine. Explanations are given for the omission at this time of products which have previously been included in *New and Nonofficial Remedies*. In most cases the N. N. R. description is included in the report as a matter of record. The volume also includes the reports rejecting various products—which have either been submitted by the manufacturer or

considered on the Council's own initiative—and which have been found not acceptable for inclusion in *New and Nonofficial Remedies*. Also incorporated is a brief summary of the decisions arrived at by the Council at its latest meeting.

FUNDAMENTALS OF PSYCHIATRY. By Edward A. Strecker, M.D., Sc.D., F.A.C.P., Professor of Psychiatry and Chairman of the Department, Undergraduate School of Medicine, University of Pennsylvania; Psychiatrist to the Pennsylvania Hospital; Attending Psychiatrist, Psychopathic Division, Philadelphia General Hospital. Philadelphia, London, Montreal: J. B. Lippincott Company. October, 1942. Price \$3.00.

This is a brief exposition of the field of psychiatry by a recognized authority. Briefly considered are history, etiology, classification, methods of examination, the organic psychoses and the psychoneuroses, defect reaction types and psychiatry of war. An excellent balance of judgment is evident throughout. The work should be useful to many who do not care for an exhaustive, technical treatise—for example, lawyers, social workers, students and medical practitioners. For them the book is highly recommended.

L. B. A.

MANUAL OF OXYGEN THERAPY TECHNIQUES including Carbon Dioxide, Helium and Water Vapor. By Albert H. Andrews, Jr., M.D., Director, Oxygen Therapy Department and Assistant Attending Otolaryngologist, St. Luke's Hospital, Chicago; Instructor in Laryngology, Rhinology and Otology (Broncho-esophagology), University of Illinois College of Medicine; Associate Attending Broncho-esophagologist, Children's Memorial Hospital, Chicago; Former Research Instructor, Department of Physiology and Pharmacology, Northwestern University Medical School. Chicago, Illinois: The Year Book Publishers, Inc. 1943. Price \$1.75.

This is a handbook on the various methods of administration of oxygen such as by oxygen tents, nasal catheter, nasal cannula, B.L.B. mask, meter mask and face masks of various types. Descriptions of each method of administration of gas include sections on starting, maintenance, cleaning and technical errors to be avoided. Discussion is brief but material is well tabulated and organized and is quite complete. There is a chapter on improvised oxygen therapy and one on oxygen in the home which should be of especial interest to the general practitioner. Other chapters are included on carbon dioxide therapy, helium-oxygen therapy, water vapor therapy. There is a general discussion also on the various gases used, the cylinders used, regulators and safety precautions for each.

E. H. G.

INDIGESTION, Its Diagnosis and Management with Special Reference to Diet. By Martin E. Rehfuss, M.D., Professor of Clinical Medicine and Sutherland M. Prevost, Lecturer in Therapeutics, Jefferson Medical College, Philadelphia. Illustrated. Philadelphia: W. B. Saunders Company. 1943.

This work of Rehfuss' is written for the general practitioner of medicine. Under the broad term of "Indigestion," he covers the field of gastro-enterology. He presents no bibliography but no scientific advance in the subject is neglected. It is extremely practical and represents the author's own rich clinical experience.

Materials of the diet are presented most excellently in a readable, compact manner. He bases his therapy on correct diagnosis, the methods of which are detailed.

The book is recommended for the general practitioner, the internist and all doctors who practice medicine, including the surgeon and the gastro-enterologist.

H. W. S.

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ESSENTIAL FACTORS IN PARTIAL GASTRECTOMY FOR GASTRIC AND DUODENAL LESIONS

CLAUDE J. HUNT, M.D.

AND

PAUL F. HUNT, M.D.

KANSAS CITY, MO.

Partial gastrectomy for duodenal ulcer or for benign or malignant lesions of the stomach must of necessity require a resection of well over half of the stomach. For duodenal ulcer, gastric resection must extend to at least 60 per cent of the stomach if gastric acidity is to be reduced sufficiently to assure fairly well against an anastomotic ulcer. When the ulcer is not too low in the duodenum or induration and fixation too extensive, the ulcer should be excised. When deep crater formation with fixation to the head of the pancreas is present, the indurated ulcerated area may be excised without attempting to remove the penetrating portion involving the pancreas. The crater portion can be seared lightly by cautery and will in no way interfere with healing or cause future trouble. If the ulcer is low in the duodenum, the relative relation to the common bile duct must be determined by exposing the duct. If, after exposure, there is sufficient room for adequate closure of the duodenum, the ulcer should be excised. I have employed this procedure with advantage on several occasions. If excision is deemed inadvisable because of fixation or the proximity of the ulcer to the common bile duct, it may be left undisturbed, but it is essential that resection of the pylorus must accompany the partial gastrectomy. This can be done with adequate room for closure of the duodenum proximal to the ulcer.

The exclusion operation with resection of a portion of the stomach has not always been satisfactory even when the prepyloric gastric mucosa was excised. It is essential that pylorospasm be eliminated by excision of the pylorus. In a number of instances the exclusion procedure has been employed by us, with excision of the gastric mucosa, but it has been abandoned in preference to pyloric excision in

those cases in which duodenal ulcer excision has not appeared feasible.

Resection of from 60 to 70 per cent or more of the stomach is essential for duodenal or gastric lesions. The ulcerative lesions require resection of a large portion of the stomach to lessen gastric acidity and to reduce the incident of an anastomotic ulcer. Frequently the high position of the lesion, the penetration and fixation to the pancreas and the accompanying induration and secondary inflammation along the lesser curvature of the stomach, necessitate high resection. Almost universally, it has been observed in the penetrating lesions into the pancreas, thickening and induration high on the lesser curvature requiring a high resection to secure normal stomach for suture and anastomosis.

Extensive resection is essential in all malignant or suspected malignant lesions of the stomach, not only to get well above any apparent malignant disease but to remove as much gland bearing tissue as possible. The gastrohepatic and the gastrocolic omentum should be removed completely and frequently the great omentum. To remove the chain of lymphatic glands along the lesser curvature, resection must extend extremely high at that point. Adequate excision of all the prepyloric gland bearing tissue above and below the stomach and duodenum is essential.

The operation for a high lying gastric lesion is best performed through a left rectus or left paramedian incision. This affords an approach which cannot be obtained by a right side or midline incision. After mobilizing the pyloric end of the stomach, the duodenum is divided between clamps and the stomach is retracted downward and to the left, making more accessible the upper part of the lesser curvature, which frequently is retracted from induration and inflammatory reaction. The left lobe of the liver may be mobilized and retracted to the right, making accessible the left gastric artery near its origin. This is the most fixed point of the stomach and high ligation and division of this artery mobilizes the stomach and permits further downward traction and access to the fundus of the stomach. Adequate abdominal relaxation is essential, else the lesion may be thought to be in-

operable. A thick abdominal wall and a large fat omentum may present mechanical difficulties. The mesocolon in part may be resected if involved when the circulation is unimpaired. Care must be exercised to determine the extent of involvement and to ascertain whether fixation is inflammatory or malignant. Malignant invasion of the pancreas must be eliminated definitely before resection is undertaken. Inflammatory fixation may simulate malignant extension. Careful investigation may reveal a definite line of cleavage, and separation of the adherent mass from the pancreas becomes an easy problem. A hasty conclusion of inoperability may deny an operable case the benefit of resection.

Many procedures for radical resection of the stomach may be employed and surgeons have certain preferences based upon experience and results.

The desirability of maintaining the normal relationship of the stomach and duodenum and the elimination of a possible gastrojejunal ulcer is of considerable importance, but in high resection it is rarely possible to unite the remaining stomach to the duodenum without suture tension. The duodenum, even when well mobilized, presents technical difficulties due to the caliber difference between it and the stomach. I do not employ the Billroth I procedure, or any of its modifications, except in prepyloric lesions requiring limited resection.

The retrocolic type of anastomosis is employed in these individuals with a long mesocolon and when the resection is not too extensive. Frequently the radical nature of the resection prohibits this procedure as the stomach cannot be easily delivered through the mesocolic opening for final suture.

The polya type of end-to-side anastomosis with the antecolic modification of Balfour and the Hoffmeister procedure of closing a portion of the stomach near the lesser curvature before the anastomosis is carried out affords more adequate and secure closure of the high lying superior angle of the anastomosis in extensive resection. The antecolic procedure facilitates approximation and anastomosis and eliminates the necessity of fixation of the remaining stomach to the mesocolic opening or to the proximal and distal limbs of the anastomosed jejunum. It is not necessary to perform an entero-anastomosis to drain the long proximal loop. Entero-anastomosis defeats the purpose of alkalinization of the gastric contents; a principle of greatest importance in the prevention of gastrojejunal ulcer, especially in resection for ulcer. An anastomosis anterior to the colon without entero-anastomosis shortens the period of operation, lessens the possibility of contamination or subsequent complications of constriction by the mesocolic opening, and will function without difficulty. In extensive resection, I have almost abandoned the retrocolic procedure in favor of the long proximal loop antecolic method.

Adequate closure of the duodenum is essential, being reinforced by interrupted sutures of silk and

covered over by omentum, or fixed to the pancreatic capsule. There is considerable intra-duodenal pressure from hepatic and pancreatic secretions, and this pressure may be sufficient to rupture the duodenal stump unless it is adequately closed and properly fortified. Sulfathiazole or sulfanilamide is placed routinely in the abdomen over the line of suture of the duodenum and stomach.

Operation is performed best under spinal anesthesia, or by local infiltration of the abdominal wall plus splanchnic anesthesia, as advocated by Finsterer. Inhalation may be employed when it is not contraindicated by respiratory complications. Of these, cyclopropane, because of the high percentage of oxygen with which it is administered, has proven satisfactory. Ether still stands as a safe and satisfactory anesthetic. It affords excellent relaxation and there is less danger when cautery excision is desired. Continuous spinal anesthesia has been extremely satisfactory in my experience. The anesthetic may be protracted over a long period of time in secondary resection or cases complicated by previous gastric surgery without the undesirable feature of a long inhalation anesthetic. The morbidity is lessened and the mortality definitely is reduced. I know of nothing that has been of such assistance in gastric surgery as continuous spinal anesthesia. The abdomen is relaxed and can be maintained so for a long period of time without harmful results by the occasional addition of more of the anesthetic agent. Haste is not necessary. Adequate time can be taken for detailed dissection and painstaking technic. With continuous spinal anesthesia, careful and meticulous surgery, aided by the free local use of one of the sulphur drugs, operative mortality may be kept to the minimum.

1016 Professional Building.

POINTS TO THE ENCOURAGING OUTLOOK IN THE FIELD OF VIRUS RESEARCH

"The opportunities for research in the field of the viruses grow daily more numerous; the results promise vast benefit to mankind," *The Journal of the American Medical Association* for April 24 says in an editorial citing some examples of recent progress in virus research.

The Journal points to a report just issued of the discovery of a new virus which causes a noncancerous tumor-like growth on the membrane lining of the mouth of the domestic rabbit, mainly situated on the under side of the tongue. Among other examples cited by *The Journal* of recent developments in this field are those pertaining to the influenza A virus which appears to be one of the smallest specific agents so far isolated; the obtaining of the virus of epidemic infantile paralysis in purified and concentrated form, and the isolation and identification of a filtrable virus believed to be responsible for the epidemic eye disease of shipyard workers that has been attracting nation-wide attention recently.

"These examples of recent research on viruses," *The Journal* says, "are not intended as an exhaustive review; they are more or less random selections which show that the study of pathogenic (disease causing) filtrable viruses continues to give results of scientific and practical value."

AN OUTBREAK OF STAPHYLOCOCCAL FOOD POISONING

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AND

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ST. LOUIS

CLINICAL ASPECTS

In the fall of 1941, an outbreak of acute food poisoning occurred among a group of approximately 225 women who had attended a luncheon. Samples of the food served at this luncheon were submitted to the laboratories of the St. Louis Health Division for analysis. The luncheon was followed by a book review during which several of the women became ill and found it necessary to leave the auditorium. The reviewer also became ill shortly after completing the book review.

The Health Division was furnished the names of 190 women who had attended this luncheon and to facilitate obtaining information pertaining to this outbreak a questionnaire was submitted to each of these women. One hundred sixty (84 per cent) answered the questionnaire and of this number 148 had developed clinical symptoms of acute food poisoning.

Table 1 shows the frequency of symptoms as indicated in the questionnaire. Vomiting, diarrhea and nausea were present in nearly all of the patients.

Table 1. *Frequency of Symptoms In 148 Food Poisoning Cases*

Symptoms	Number of Cases	Per Cent of Total
Vomiting	143	97
Diarrhea	136	91
Nausea	134	90
Chill	94	63
Fever	63	42
Mental depression	53	36
Sensation of being paralyzed	52	35
Muscular twitchings	48	32
Apprehension	42	28

Twelve of the women who became ill were interviewed by one of us (J. E. S.) and all showed strikingly similar symptoms. A brief summary of a typical case follows:

A housewife, aged 41, became ill about four hours after the luncheon, with violent vomiting and diarrhea. She collapsed soon after she arrived at her home and was promptly hospitalized. On admission she was in mild shock; physical examination revealed normal findings except for slight diffuse abdominal tenderness without muscle spasm. The patient was discharged three days later as recovered except for generalized weakness and nervousness.

The majority of patients recovered in from four to five days. There were no fatalities. The incubation period in 99 cases was less than three hours and in the remaining 49 cases less than six hours.

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Presented at the Epidemiology Section of the 71st Annual Meeting of the American Public Health Association, St. Louis, October 30, 1942.

The nature of the foods served at the luncheon, which consisted of chicken salad, peaches with cheese filling, cheese sandwiches, potato chips, cake and coffee, immediately placed suspicion on the chicken salad. The results of the questionnaire also indicated the chicken salad. These results are shown in table 2.

Table 2. *The Infectivity Rate of Persons Eating Chicken Salad*

Number answering questionnaire	160
Ate chicken salad, became ill	148
Ate chicken salad, did not become ill	12
Did not eat chicken salad, became ill	0
Infectivity rate (questionnaire group only)	92.5 per cent

EPIDEMIOLOGIC ASPECTS

The chicken salad was prepared by a large food market in St. Louis which only occasionally engages in the catering business. The order was for ten gallons of chicken salad, which consisted of chicken, hard boiled eggs, pickles, celery, mayonnaise and seasoning. The chickens were cooked and boned on the afternoon of September 20 (Saturday) and placed in a large cooling room over the weekend. On the morning of September 22 (Monday), the salad was assembled and called for at the market at 10:00 a. m. It was then taken directly to the cafeteria where the luncheon was served. Here it was dished out for the luncheon which began at approximately 12:30 p. m. The women who assisted in preparing the luncheon stated that many of the assembled luncheon plates (those first assembled) were merely placed on tables and remained there for from two to three hours before they were served. It also was stated that it was "very hot" in the room where the luncheon was assembled. The highest outdoor temperature on the day of the luncheon, as recorded by the Weather Bureau, was 89 F. The highest outdoor temperatures for the two preceding days were 88 F. and 90 F., respectively.

Examination of the food handlers who prepared the salad—two white males—failed to reveal the presence of boils, infected cuts or similar infections. They both stated that they felt perfectly well and had not been ill recently. Nose and throat cultures were not obtained.

LABORATORY ASPECTS

Because of the relative infrequency of reported staphylococcal food poisoning outbreaks, a brief review of the literature follows:

Barber¹ in 1914 reported an outbreak of staphylococcus food poisoning resulting from the consumption of cow's milk. He observed that the milk from a certain cow could be consumed with impunity if used promptly. However, if it was allowed to stand at room temperature for even a few hours, symptoms of nausea, vomiting, abdominal pains and diarrhea occurred. Similar symptoms were produced in human volunteers by the consumption of milk cultures of this staphylococcus. Kittens, puppies and monkeys were refractory.

Staphylococcal food poisoning was rediscovered

by Dack² in 1930. Since that time several other outbreaks have been reported: Dack and Associates,³ Jordan,⁴ McBurney⁵ and Jordan and Burrow.⁶

In 1936 Dolman⁷ reported that only a few strains of staphylococci are responsible for food poisoning outbreaks. These organisms, according to this investigator, produce specific metabolites in semi-fluid media which is incubated in an atmosphere containing a high percentage of carbon dioxide. He also found the cat to be a more convenient and economical experimental animal than the monkey which had been used by previous workers. Dolman produced characteristic symptoms in kittens by intraperitoneal injection of formalinized filtrates prepared from enterotoxin producing strains of staphylococcus. The animals promptly exhibited lassitude and weakness, culminating within one half hour in a series of intermittent paroxysms of vomiting and diarrhea. The animals remained extremely ill for several hours, after which time they usually recovered completely. The experiments of Dolman were corroborated by Minet.⁸ In a recent communication Hammond⁹ found that intravenous injections of staphylococcal toxin into adult cats were more reliable than intraperitoneal inoculations into kittens.

All food served during the luncheon in question was examined bacteriologically. Each food was inoculated directly onto blood agar, Difco SS agar and into Conradi bile and beef infusion broths. After from twenty-four and forty-eight hours' incubation, transfers were made from the broth cultures to Bismuth sulfite and blood agar. Numerous organisms including *B. proteus*, *B. coli* and *M. tetragenous* were recovered from the foods, which consisted of chicken salad, peaches, cream cheese filling, pimento cheese and potato chips. In addition to these organisms, strains of hemolytic and nonhemolytic staphylococci were recovered from the chicken salad.

The technic described by Dolman was used in determining the pathogenicity of the strains of staphylococci. Two kittens each were injected with 3 cc. and 1.5 cc. of the heated (100 C. for thirty minutes) filtrate of the hemolytic strain. The two animals receiving the larger amounts of filtrate developed symptoms with vomiting and diarrhea two hours after the injection while the other two kittens showed similar symptoms after three hours. All animals recovered in about five days. The hemolytic, dermo-necrotic and lethal properties of filtrates from the hemolytic strain were established. Kittens injected with the heated filtrate of the non-hemolytic staphylococcus developed no symptoms.

COMMENT

The method by which the food became contaminated in this outbreak cannot be determined definitely. Recent investigations of several similar outbreaks in Hamilton, Canada,¹⁰ involving some 125 persons, revealed that the micro-organisms which contaminated the food originated in the nose and throat of those preparing it. When one considers

the high incidence of staphylococci in the nose and throat of the general population, it is not at all surprising that this should be an important source of contamination. Hallman, Hart and McFarlin¹¹ give the incidence of staphylococci in the nose of the general population as about 76, 70 and 66 per cent respectively. While this concept of "carriers" is of relatively little significance as far as the general population is concerned, it is of utmost importance in food handlers.

In this particular outbreak the absence of any refrigeration from the time the salad was assembled until it was eaten (from three to four hours) may have been sufficient to incubate a previously contaminated food. The responsible organism may have been introduced through careless and multiple handling of the salad, the infection being transmitted to the food either by human hands or by improperly washed utensils.

Control measures must be directed along two main channels, namely; improved methods of preparing and handling the foods to minimize contamination, and prompt and adequate refrigeration of the finished products to prevent proliferation of those micro-organisms which have gained access to the food. This outbreak stresses the absolute necessity for adequate refrigeration of such foods up to the time the prepared food is to be consumed.

SUMMARY

1. Of 160 known persons eating chicken salad at a luncheon 148 persons or 92.5 per cent developed food poisoning within from three to six hours. More than 90 per cent of the victims developed vomiting, diarrhea and nausea and all recovered within from four to five days.

2. A hemolytic staphylococcus was isolated in large numbers from the chicken salad. This organism was found to produce an enterotoxin identified by the kitten method of Dolman.

3. The "carrier" or subclinical infection concept of contamination from food handlers may be significant in the epidemiology of this type of food poisoning outbreak.

4. This outbreak again emphasizes the need for cleanliness, carefulness, adequate refrigeration and experience on the part of persons engaged in the preparation of food for any large number of persons.

St. Louis Health Division.

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ACUTE APPENDICITIS

MANAGEMENT OF RUPTURE WITH SPREADING PERITONITIS

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Acute appendicitis, a condition known to exist for a great number of years although not recognized frequently until recently because of the poorer facilities of diagnosis, has had a high mortality rate. In recent years, with improving diagnostic facilities and the public becoming more educated as to the signs and symptoms of this condition, there has been an increase in the number of cases of appendicitis diagnosed with the general mortality rate gradually decreasing. But even with the progress, acute appendicitis with rupture and spreading peritonitis still has a high mortality rate, this condition prevailing especially in the rural communities. Three years ago, for example, in my community, the incidence of ruptured appendices with peritonitis was extremely high, but, I have noticed in the last eight months that the number of cases of appendicitis with peritonitis is getting less although the number of cases of acute appendicitis operated upon has increased. I believe that this condition is due to the people of this particular community learning more concerning the signs and symptoms of early acute appendicitis and becoming educated to not using purgatives in acute abdominal pain until it is proven not to be appendicitis and realizing the importance of early hospitalization and operation.

Because of this continued high percentage of acute ruptured appendices with spreading peritonitis and a rather high mortality rate, I will discuss the management I have used and the results I have obtained in my experience in such cases, although the number is comparatively small.

There have been many different ideas as to the time of operation, conservative or immediate. In all of my cases, I have operated immediately no matter how acute the condition, doing this with the idea of getting rid of the offending organ as soon as possible with drainage of the abdominal cavity in order to conserve and utilize what resistance the body has left rather than trying to localize the infection and at the same time lowering the body resistance by the absorption of toxin from the infected area.

While getting the patient ready for the operation, from 1,000 to 2,000 cc. of 10 per cent glucose in Ringer's solution is given intravenously. Preoperative medications are seconal, morphine and atropine given in dosages depending on the age and size of the patient.

The type of incision used in the larger percentage of cases has been the right rectus muscle splitting incision. In 25 per cent of the cases, mostly male patients, I have used the McBurney incision. I have seen no difference in results. Free purulent peri-

toneal fluids were removed by suction and the appendix located and removed with the least possible trauma, the appendiceal stump never being inverted but cauterized with phenol and alcohol and dropped back into the abdomen. A 5 gram ampule of sulfanilamide or sulfathiazole was put directly into the abdominal cavity. Drainage was established in all cases by using a medium sized Penrose drain inserted into the right iliac fossa.

On return of the patient to his room from the operating room, he was given 1,000 cc. of 10 per cent glucose in Ringer's solution intravenously and stimulants if necessary. After the patient reacted from the anesthetic, if distention became evident, a continuous Wangenstein suction was started and from 2,000 to 3,000 cc. of glucose was given daily. Neoprontosil, 5 cc. intramuscularly, was given every four hours for twenty doses and morphine sulfate given in proper dosage depending on the age and size of the patient every four hours to restrain intestinal motility. Nothing was given by mouth except sips of warm water for the first three or four days. To get proper drainage, the patient was placed in full Fowler position flat on his abdomen immediately after reacting from the anesthetic and kept in that position for the first four or five days with only about two hours in twenty-four hours rest on the back. The reason for this procedure is that drainage will be greater and more rapid and complete and also will keep the purulent, irritating, infected peritoneal fluid from the diaphragm. In my experience in using this treatment, the temperature drops to from 98.6 to 99 F. in four or five days, the patient feels good on the third postoperative day and only very occasionally does distention occur which would require inserting a Wangenstein suction. On from the fifth to the seventh postoperative day, the patient is able to handle himself comparatively easily and starts complaining of being hungry. The drainage will have about stopped and on the seventh or eighth day the drain is removed. The average stay in the hospital, preoperative and postoperative combined, is seventeen and a half days, with the patient able to walk out.

The number of postoperative complications have been comparatively few. There were three cases of thrombophlebitis of the femoral vein which completely recovered in from six to ten months. Only one case of severe adhesions has occurred so far and patients have been checked from six months to three years after operation. There have been no postoperative hernias. It would seem that rapid drainage of the irritating, purulent peritoneal fluid and minimal amount of trauma to abdominal contents have prevented the formation of abdominal adhesions.

The total number of patients that have had appendectomies is 311, forty-one of the appendices being ruptured with peritonitis, or 13.1 per cent. In all the cases of ruptured appendicitis with peritonitis the described management was used. Of the forty-one cases of ruptured appendices with peritonitis, there were three deaths and thirty-eight re-

coveries, or 7.3 per cent deaths in the cases with peritonitis.

CONCLUSIONS

1. A review of 311 cases of appendectomy with a mortality rate of .9 per cent is given.
2. There was a total of forty-one cases of appendicitis with peritonitis with three deaths or 7.3 per cent mortality rate.
3. The average number of hospital days was seventeen and a half for the cases with rupture and nine for the other cases.
4. The number of postoperative complications which have occurred is four, three cases of thrombophlebitis obliterans and one case of severe postoperative adhesions requiring an adhesiotomy.
5. Immediate removal of the appendix and abdominal drainage as soon as the case has been diagnosed has been carried out.
6. Early removal of the drain caused no formation of ventral hernia in any of the cases operated upon.
7. Powdered sulfanilamide or sulfathiazole was placed in the abdominal cavity at the time of operation and neoprontosil intramuscularly was started immediately postoperatively.

In my experience, the postoperative management of placing the patient in full Fowler position, flat on the abdomen, has carried with it a low mortality rate and low hospitalization cost.

CASE REPORTS OF THE BARNES HOSPITAL

CLINICAL AND POSTMORTEM RECORDS USED IN WEEKLY
CLINICOPATHOLOGIC CONFERENCES AT BARNES
HOSPITAL, ST. LOUIS

W. BARRY WOOD, JR., M.D., AND ROBERT
A. MOORE, M.D., Editors

CASE 15

PRESENTATION OF CASE

First Hospital Admission.—A 59 year old Lithuanian entered Barnes Hospital on June 16 and was discharged June 21, 1941.

Chief Complaints.—Shortness of breath, swelling of the abdomen and of the legs.

Family History.—Father died at 72 of pneumonia. Mother died at 80 of unknown cause. The patient had two sisters in Lithuania but their medical history was unknown to him.

Social History.—The patient was born in Lithuania but had lived in the United States for the last forty years during which time, until the onset of the present illness, he was a coal miner. His habits were regular and his diet adequate.

Past History.—The patient had had scarlet fever as a child. He had had asthma as long as he could remember. Apparently this was due partially to feathers for his attacks were much milder and less frequent on avoidance of feather pillows. He had

malaria in 1920. Two ribs were fractured in 1921. In 1924 he suffered two hemorrhages from the lungs. There is no history of rheumatic fever. Venereal disease was denied.

Systemic History.—There was some impairment of hearing in the right ear. For the last ten years he had become increasingly nervous.

Present Illness.—As far back as 1920 the patient noted some shortness of breath but he could not dissociate this readily from his asthma. During the intervening years dyspnea increased particularly on exertion and in 1935 a diagnosis of heart trouble was made. During the year previous to this there was increasing swelling of the ankles and then of the legs. In 1935 the abdomen became swollen and that year the first abdominal puncture was made with removal of yellow fluid. During the intervening six years the patient had been incapacitated because of more or less persistent swelling of the legs and abdomen and shortness of breath. He was on digitalis and at times on strophanthin almost continuously and on many occasions fluid from his abdomen had been removed. The chief complaints gradually increased and he was sent to Barnes Hospital for study.

Physical Examination.—Temperature was 37.8 C., pulse 112, respiration 28, blood pressure 110/90. The patient was lying flat in bed and preferred this position. There was marked cyanosis of the face, neck and lower extremities as well as of the mucous membranes of the mouth. There was chemosis of the conjunctivae and the sclerae showed many dilated blood vessels. The fundi revealed distended veins and some A-V nicking. Some impairment of hearing of the right ear was found. The pharynx was injected and the tonsils were small and red. The neck, which was short, showed distended veins. The chest was hypersthenic and resonant throughout with some impairment to percussion at the bases. The breath sounds were distant. Expiration was prolonged and wheezing was distinctly heard. There were many coarse rales below the angle of the right scapula and a few at the left base. The left border of the heart percussed to the anterior axillary line. The heart sounds were distant, poor in quality and rapid. There was an occasional extrasystole. The S_1 was accentuated and was followed by a systolic murmur. The abdomen was distended and presented many puncture scars below the umbilicus. The liver, felt on ballottement about 12 cm. below the right costal margin, was firm with an irregular edge and was tender. Signs of abdominal fluid were present. There was marked pitting edema of the sacrum and lower extremities. Neurologic examination was negative. The prostate was enlarged one and one half times and was very tender.

Laboratory Findings.—Blood count: red blood cells were 3,840,000; hemoglobin 85 per cent; white blood cells 7,600; differential count: "stab" forms 10 per cent, segmented forms 53 per cent, lymphocytes 30 per cent, monocytes 3 per cent, eosinophils

3 per cent, basophils 1 per cent. Urinalysis: specific gravity 1.010, acid, albumen 2 plus, sugar negative, a few hyaline and granular casts. Kahn test was negative. Blood chemistry: nonprotein nitrogen 42 mg. per cent, total proteins 6.1 gram per cent; albumin 3 gram per cent, globulin 3.1 gram per cent. Electrocardiogram: myocardial infarction in the past, or severe myocardial damage of the coronary type and digitalis effect. Roentgenograms of the chest revealed the heart to be tremendously enlarged to the left and the right. The aortic arch was inconspicuous. The trachea was deviated slightly to the right. Both hilar shadows were increased in extent and density. The lung markings were very prominent and had in association peribronchial infiltration particularly on the right which in places amounted to almost complete opacity. Kymograms of the heart showed good movement over the left ventricle. The aortic movements were indistinct, shallow, but of normal contour.

Course in Hospital.—On bed rest, limited fluids, digitalis, aminophyllin, ephedrine, mercupurin and avoidance of feathers, the patient improved remarkably and lost 19 pounds in weight during the five days he was in the hospital. He was discharged to his local physician and advised to continue digitalization, aminophyllin and ephedrine.

Second Hospital Admission.—He was in the hospital from August 2 to August 8, 1941. Since discharge from hospital six weeks previously, the patient had remained on the medication advised. For a time he felt somewhat better and attempted mild work but within a week or two edema of the legs and swelling of the abdomen recurred markedly. He received two paracenteses. Five days before readmission he had used up his digitalis and had taken none since. He returned to the hospital for further study.

Physical Examination.—Temperature was 38 C., pulse 104, respiration 24, blood pressure 130/88. The patient appeared to be in mild respiratory distress but was able to lie in an almost horizontal position. There was marked cyanosis of the entire head and lower extremities. The appearance of his head was described as moon-shaped with large infra-orbital bags and puffy jowls. There were no changes in the eyes from previous admission. The right ear drum was dull. The chest was barrel-shaped; expansion was limited but equal. Hyperresonance was evident despite a thick chest wall. Sounds were not remarkable. There were moist rales, most numerous at the bases. No rhonchi were heard. The left border of the heart extended to the left anterior axillary line, and on the right, the relative cardiac dullness measured 5 cm. in the third interspace. The rate was rapid and there were premature systoles frequently running for ten or more successive beats. There was a loud, rough crescendo systolic murmur heard best over the left nipple where occasionally a third heart sound was audible. The liver was felt to be pulsating seven finger breadths below the right costal margin. Spleen and kidneys were not felt. There were signs of fluid in the abdomen. Scro-

tum was edematous. There was marked pitting edema of the legs and feet which were dusky purple. This edema extended over the sacrum. No clubbing of the fingers was noted.

Laboratory Findings.—Blood count: red blood cells 6,640,000; hemoglobin 17.35 gms. per cent; white blood cells 8,200; differential count: eosinophils 2 per cent, "stab" forms 4 per cent, segmented forms 82 per cent, lymphocytes 10 per cent, monocytes 2 per cent. Kahn test was negative. Urinalysis: specific gravity was 1.013, acid, albumin 2 plus, sugar negative, guaiac negative, microscopically, occasional hyaline cast. Blood chemistry: nonprotein nitrogen 53 mg. per cent, arterial O₂ capacity 22.9 vol. per cent, arterial O₂ content 17.1 vol. per cent, venous O₂ content 7.5 vol. per cent. Circulation time arm to lung 25 seconds, arm to tongue 67 seconds. Venous pressure 290 mm. water. Vital capacity was 1,500 cc. Electrocardiogram as before; in addition an auricular flutter with 2-1 block and numerous ventricular premature contractions from many foci were observed. Kymograms were as on previous admission. On fluoroscopic examination the heart was enormously enlarged. The diaphragm was flattened and moved but slightly.

Course in Hospital.—The patient was again placed on a dehydration routine and was rapidly digitalized. An attempt was made to reduce his cyanosis by means of a Boothby mask. The patient however failed to respond to treatment, became more and more confused and gradually lapsed into coma. On the sixth hospital day his temperature rose to 39.4 C. and he expired.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: This patient evidently had some serious lesion in his heart and probably associated lesions in his lungs and liver. We must first identify the nature of this heart condition. We might begin with the electrocardiographic diagnosis which indicated that the patient may have had a myocardial infarction or disease of the coronary arteries in the past. Dr. Massie, what is your opinion about this patient's heart?

DR. EDWARD MASSIE: This man may have had disease of the coronary arteries or an old myocardial infarct, but I believe these conditions if present are merely contributory to the major illness.

DR. ALEXANDER: Do you agree with those who believe that disease of the coronary artery or a myocardial infarct will produce hypertrophy of the heart?

DR. MASSIE: There is a great deal of dispute concerning this point. Most observers feel that disease of the coronary arteries *per se* does not produce cardiac hypertrophy but that it is the associated conditions such as hypertension which cause the cardiac enlargement. On the other hand, there are some cardiologists such as Dr. Paul White who feel that disease of the coronary arteries alone in some instances is associated with cardiac hypertrophy.

DR. ALEXANDER: This man had a very loud

systolic murmur. Could this be related to valvular disease of the heart with resultant cardiac enlargement?

DR. MASSIE: This man did not have valvular disease. Such a murmur may be produced by cardiac enlargement and subsequent dilatation of the valvular rings. It is quite likely that this man had relative tricuspid insufficiency as a result of dilatation of the ring of the tricuspid valve.

DR. ALEXANDER: What about degenerative heart disease?

DR. MASSIE: That is possible here but one does not usually see this degree of cardiac enlargement to the right in such cases.

DR. ALEXANDER: Are there not cases of acute infection in which cardiac enlargement is marked?

DR. MASSIE: Yes. Diphtheritic myocarditis is an example.

DR. ALEXANDER: We have no evidence of an active infectious process. So far the only clue points to disease of the coronary arteries, but that does not tell the whole story. Is there any other possibility?

DR. MASSIE: Cor pulmonale is a very likely diagnosis in this patient.

DR. ALEXANDER: Will you define cor pulmonale?

DR. MASSIE: Cor pulmonale may be acute or chronic. Sudden massive obstruction of the pulmonary circulation sufficient to cause dilatation of the right ventricle gives rise to acute cor pulmonale. Chronic cor pulmonale which is probably present in this patient results from chronically increased resistance in the pulmonary circulation due usually to narrowing of the pulmonary vascular bed by long-standing pulmonary disease. As a result of the pulmonary hypertension chronic right ventricular strain develops with the production of chronic pulmonary heart disease.

DR. ALEXANDER: In this case, what is the evidence that there was obstruction of the flow of blood from the right ventricle through the lungs?

DR. MASSIE: We have changes in the lungs as shown in the roentgenogram. Also the pulmonary circulation time of 25 seconds is prolonged over the normal level of three to eight seconds and I feel that this is direct and specific evidence that there is obstruction to the pulmonary circulation. Another factor that favors this conclusion is the fact that the patient was very cyanotic.

DR. ALEXANDER: This man had had asthma all his life. Does bronchial asthma affect the heart?

DR. MASSIE: Only over a period of years when secondary changes occur. However, I should ask you that question.

DR. ALEXANDER: Asthma is not usually associated with heart failure. There is even some evidence that asthma spares the heart. Dr. Moore, would you say the patient had emphysema? His chest was barrel shaped. It is significant that on fluoroscopic examination his diaphragms were low and moved very little.

DR. SHERWOOD MOORE: There is an increase of volume of the base of the lungs.

DR. ALEXANDER: We have one thing that tends to cause cor pulmonale and that is emphysema. What else might lead to this condition? Anything else in the lung that may have caused it?

DR. ALFRED GOLDMAN: This man was a coal miner for forty years.

DR. ALEXANDER: Would you say that the patient had silicosis?

DR. GOLDMAN: The changes of silicosis are not apparent on the radiograph.

DR. ALEXANDER: May we suggest that he might have pulmonary arteriosclerosis?

DR. MASSIE: It appears to me that in view of this patient's history of asthma, his chronic bronchitis and the marked emphysema as shown by the roentgenogram that we have adequate cause for cor pulmonale without bringing in the factor of pulmonary arteriosclerosis.

DR. ALEXANDER: The patient had a definite polycythemia.

DR. MASSIE: This probably contributed to the cyanosis.

DR. ALEXANDER: There was an extreme degree of unsaturation of the arterial blood, and yet the patient had a vital capacity of 1,500 cc. Would this degree of emphysema cause such polycythemia?

DR. MASSIE: The vital capacity varies with the surface area. From the description, this man must have been a huge individual. Therefore, a vital capacity of 1,500 cc. may be equivalent to half that amount in an average man.

DR. ALEXANDER: That is true. Height, weight and age should be taken into consideration. To recapitulate then, the discussion has brought out the fact that this man had coronary disease, and considerable pulmonary arteriosclerosis which may be associated with the emphysema. Dr. Wood, do you believe that the patient had Ayerza's disease?

DR. W. BARRY WOOD: No, I do not believe that the patient had primary pulmonary arteriosclerosis. I would, however, expect the lungs to show arteriosclerosis of the larger pulmonary arteries since this is a common complication of advanced pulmonary emphysema.

DR. ALEXANDER: If this is cor pulmonale because of a strain on the right heart, why is the left heart hypertrophied?

DR. MASSIE: It may be due to disease of the coronary arteries and other degenerative changes as a result of hypertension in the past.

DR. ALEXANDER: Does hypertrophy of the right ventricle and atrium exist without hypertrophy of the left ventricle and atrium in cor pulmonale?

DR. MASSIE: Not usually, except acutely as occurs in pulmonary infarction.

DR. ALEXANDER: I believe there is no such thing as hypertrophy of one side of the heart without hypertrophy of the other, as they are both part of one muscle. The heart is made up of layers of muscle. Some layers make up separate parts of the heart, but others supply both chambers. There cannot be hypertrophy of part of a muscle; therefore, there can be no selective hypertrophy of the

right side of the heart without some participation of the left.

DR. LLEWELLYN SALE: Is it possible that this man had adhesive pericarditis with constriction on the vena cava?

DR. MASSIE: I would think that he probably had adhesions between the heart and the pericardium but he does not have chronic constriction of the heart. We should also consider the possibility of hepatic disease. This man was able to lie flat on his back in spite of severe cardiac failure. This may be accounted for by tricuspid insufficiency or by cirrhosis of the liver.

DR. ALEXANDER: Then we may say that the patient had emphysema, some arteriosclerosis of the pulmonary arteries and cirrhosis of the liver. What kind of cirrhosis does he have?

DR. MASSIE: I favor portal cirrhosis in view of the fact that it has been present for so many years. Occasionally cardiac cirrhosis is present for so long a time but not usually.

DR. ALEXANDER: I would favor a central or cardiac cirrhosis. Dr. Wood, what is your opinion regarding the liver?

DR. WOOD: I believe that the patient probably had cardiac cirrhosis rather than primary Laennec's cirrhosis.

CLINICAL DIAGNOSIS

Arteriosclerosis of pulmonary arteries.
Pulmonary fibrosis.
Hypertrophy and dilatation of heart.
Cardiac failure with chronic passive congestion of liver, ascites, and edema.
Pericardial effusion.

DR. ALEXANDER'S DIAGNOSIS

Emphysema.
Arteriosclerosis of pulmonary arteries.
Hypertrophy and dilatation of the heart.
Cardiac cirrhosis.

ANATOMIC DIAGNOSIS

Bronchiectasis of all lobes of the lungs with thickening of the basement membrane, infiltration with eosinophils and hypersecretion (asthma).

Arteriosclerosis of the pulmonary arteries, advanced in tertiary branches.

Fibrous pleural adhesions.

Hypertrophy and dilatation of the heart, advanced of right ventricle and atrium.

Hydropericardium.

Hydrothorax.

Chronic passive congestion of liver, spleen, and kidneys.

Central cirrhosis of the liver.

PATHOLOGIC DISCUSSION

DR. MARGARET SMITH: The coronary arteries show only the slightest arteriosclerosis and no generalized arteriolar sclerosis is present. The hypertrophy and dilatation of the heart which were greatest on the right side were advanced, the heart

weighing 860 grams. The hypertrophy and dilatation must be attributed to the changes in the lung. The anatomic evidences of asthma are present, thickening of the basement membrane of the bronchial epithelium, infiltration of the bronchial walls with eosinophils and an excessive production of mucus. In addition there is bronchiectasis involving the smaller bronchi and fibrosis of the lungs also, most extensive about the smaller bronchi. There is an arteriosclerosis chiefly in the smaller branches of the pulmonary arteries in areas of fibrosis. A moderate emphysema is also present.

The lesion of the liver is not the common type of nodular cirrhosis but a central cirrhosis resulting from recurrent passive congestion over a long period of time. It appears that the ascites was probably associated with chronic passive congestion and was not the result of portal obstruction due to nodular cirrhosis.

CASE 16

PRESENTATION OF CASE

A 43 year old laborer entered Barnes Hospital on September 14, and died September 23, 1941.

Chief Complaints.—Chills, fever, malaise and feeling of tightness in the chest.

Family History.—Not stated.

Social History.—The patient had been a rock breaker in a quarry. The drinking water came from a well. The family's milk was supplied by a neighbor and was unpasteurized. There was no history of contact with rabbits or ticks.

Past History.—The only significant statement on the chart is that the patient had had abdominal pain with tarry stools four years previous to admission. He did not recall the relation of pain to meals or the effect of alkalies. He had had no abdominal pain since that time.

Systemic History.—Not stated.

Present Illness.—Two weeks before admission the patient began to feel fatigued and work became increasingly difficult to perform. On September 9 severe headache developed. The following day he suffered chills, joint pains and malaise. The temperature was recorded as from 102 F. to 104 F. He then began to feel a sense of constriction in the chest followed by cough which produced thick, sticky, dark sputum. These symptoms persisted. Daily chills and fever occurred and the patient vomited frequently, especially on attempting to eat, but no blood in the vomits or stools was noted. No eruption on the skin had appeared at any time. A local physician diagnosed malaria and prescribed quinine without effect on any of the symptoms and the patient was brought to the hospital for diagnosis and treatment.

Physical Examination.—Temperature was 40.2 C., pulse 86, respiration 24, blood pressure 120/70. The patient was well nourished and developed, and appeared febrile and acutely ill. He was somewhat confused. There was some cyanosis of the lips but no dyspnea. No skin eruption was present. The teeth were absent; the tongue heavily coated. The

pharynx was not inflamed. There was no enlargement of the lymph nodes. Over the right lung posteriorly there were slight dullness to percussion, slightly diminished breath sounds and a few rales. The right thoracic wall was tender on pressure anteriorly. No friction rub was recorded. The examination of the heart revealed normal findings. The abdomen was flat. There were moderate epigastric tenderness and some muscle guard over that area. General palpation was not satisfactory but no viscera were felt. The right lobe of the prostate gland was enlarged to twice normal size, firm and tender on palpation. There were no abnormal neurologic signs.

Laboratory Findings.—Blood count: red cells 4,600,000; hemoglobin 13.5 grams; white cells 9,200; differential count: basophils 1 per cent. Smear showed no parasites. Urinalysis: specific gravity 1.014; albumin trace; sugar 0, sediment rare, white blood cell, no casts; culture, few colonies of staphylococcus albus and diphtheroid bacilli. Kahn test was negative. Blood culture showed no growth. Agglutination tests: typhoid 4 plus in dilution of 1:40, Brucella negative; B proteus 0:19, 2 plus in dilution of 1:40. Stool culture negative for typhoid dysentery group. Sputum smear showed gram positive diplococci arranged in chains predominating; many gram negative diplococci; culture M. catarrhalis, nonhemolytic influenza bacilli, few pneumococci; mouse inoculation, mouse survived. Roentgenogram of chest showed haziness over the entire right chest with complete opacity from the anterior end of the fourth rib downward. In the lateral view this area of opacity was in the region of the middle lobe. Diagnosis: pneumonia, right middle lobe.

Course in Hospital.—The signs in the right lung heard on admission gradually extended until apparently the middle and lower lobes were involved. Signs of pleural fluid appeared. The chest was tapped four days after admission and 180 cc. of slightly cloudy fluid were removed. This showed a specific gravity of 1.012, and 3,200 cells but a differential count was unsatisfactory because of clumping. No bacteria were seen on smear and culture was sterile after forty-eight hours. On a second tap the following day 450 cc. of cloudy yellow fluid with 3,000 cells were secured. The culture was sterile. Roentgenogram of the chest on September 18 revealed apparent resolving pneumonia in the right middle lobe, fluid in the right pleural cavity and a questionable interlobar effusion. Signs of fluid and probable consolidation in the right lower chest persisted until death.

On the third hospital day the patient twice vomited a small amount of coffee ground appearing material and evacuated a large tarry stool which gave a 4 plus guaiac reaction. A similar emesis occurred on the seventh hospital day. His abdomen was then very tense and tympanitic. Two days later the patient suddenly developed intense lower abdominal pain. The abdomen was distended and tympanitic. Within five hours, a fall in temperature

from 39.5 to 37.4 C. occurred, accompanied by profuse sweating, failing pulse, cold extremities and a blood pressure level of 90, 50. The patient expired apparently in shock.

During the hospital residence the temperature ranged between 39 and 40.5 C, but the pulse rate was proportionately less, from 80 to 110. It was noted to be dicrotic on one examination. Significant laboratory findings were a fall in red blood cells to 3,600,000 and a fall in white cells from 15,000 on September 18 to 3,900 the following day when a transfusion reaction (severe chill) occurred. On September 20 the white cell count was 4,350 with 30 per cent stab forms, 31 per cent segmented forms, 37 per cent lymphocytes and 2 per cent monocytes. Agglutination test for tularemia was 2 plus in 1:320 dilution. The nonprotein nitrogen was 22 mg. per cent.

Sulfadiazine was prescribed until the leukopenia developed. It had no apparent beneficial effect. Oxygen was administered and transfusions were given.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: This patient presented evidence of an acute infection with lesions in his lung and pleural cavity and in the gastrointestinal tract. I found it very difficult to reconcile all the findings with a single diagnosis without violating statistical evidence. We may consider first his pulmonary lesion. Dr. Moore, would you say from the roentgenograms that this is a lobar consolidation of the middle lobe?

DR. SHERWOOD MOORE: I believe there was consolidation of the entire middle lobe with fluid in the interlobar fissure.

DR. ALEXANDER: Dr. Goldman, in view of this lesion, what clinical diagnosis is suggested to you?

DR. ALFRED GOLDMAN: The lesion had the typical distribution of pneumococcal pneumonia. However, no definite pneumococci were obtained on culture. The pleural fluid was sterile and this fact together with the pulmonary lesion suggests tularemic pneumonia.

DR. ALEXANDER: The agglutination reaction for tularemia was 2 plus in a dilution of 1:320. Dr. Harford, if this was tularemia was it of the typhoid type?

DR. CARL HARFORD: Yes, that is right.

DR. ALEXANDER: The patient died during the third week of the disease. There is no history of this man having handled rabbits.

DR. CARL POLLOCK: I recall that the patient told me that before he became sick, he took a rabbit away from his dog.

DR. ALEXANDER: Of course, this statement by Dr. Pollock is of great significance in this case. Unfortunately this very important fact was never recorded in the history. Without this evidence it would be extremely difficult to imagine how this individual could have developed tularemia of the typhoid type. The disease may occasionally be contracted by persons eating uncooked rabbit meat.

With this additional evidence we would naturally suspect tularemia. The fever would be in keeping with this diagnosis. What about the slow pulse rate?

DR. WILLIAM BARRY WOOD, JR.: Relative bradycardia is characteristic of tularemia. I am not sure, however, that the pulse is often dicrotic.

DR. ALEXANDER: What about the white blood cell count? Is it unusual to have it fall from 15,000 to 4,000 during sulfanilamide chemotherapy?

DR. WOOD: Leukopenia occurs with tularemia. I do not think that the low count had anything to do with the chemotherapy. The leukopenia of chemotherapy comes late, usually after the fourteenth day of treatment.

DR. ALEXANDER: With the low white blood cell count there was a 30-30-30 distribution in the differential count, a phenomenon in keeping with certain disorders. Dr. MacBryde, you were once interested in this phenomenon.

DR. CYRIL M. MACBRYDE: Such a differential count is found in typhoid fever and malaria. I am not sure whether it occurs in tularemia, but I would expect it to occur in such an infection.

DR. ALEXANDER: Is it not found in rubella also?

DR. MACBRYDE: Yes, but rarely.

DR. ALEXANDER: So far, we have a history of contact with a rabbit, a suggestive lesion of the lung and a high agglutination titer for tularemia. Would you not expect a patient with such severe tularemia to have a higher agglutination titer?

DR. PAUL HAGEMAN: If he had lived longer he would have developed a higher agglutinin titer. The agglutination test does not become positive until the second week.

DR. ALEXANDER: How do you feel about the diagnostic significance of the agglutination test in tularemia? Does a value of 2 plus in dilution of 1:320 imply an active lesion?

DR. HAGEMAN: It would only be indicative of past or present infection.

DR. ALEXANDER: This man had signs referable to the abdomen. He vomited blood, had tarry stools and had signs of perforation. What about such signs in tularemia, Dr. Harford?

DR. CARL HARFORD: They have been described. I found one sentence in a recent article which said that patients die with gastrointestinal hemorrhage.

DR. ALEXANDER: Has anyone else any information on this point?

DR. GOLDMAN: Ulceration of the pharynx is the only common lesion in the digestive tract.

DR. ALEXANDER: When a person ingests uncooked rabbit, lesions of the intestines sometimes develop. I know of no cases of ulceration of the duodenum.

DR. MARGARET SMITH: There was no hemorrhage from tularemic ulcers of the ilium described in a child studied in the laboratory here a few years ago.

DR. ALEXANDER: We now have suggestive indication that one may have tularemic ulcerations of the bowel. In this patient there were signs of perforation. The possibility of tularemic ulcer with per-

foration is a very unusual phenomenon that presents itself.

DR. EDWARD MASSIE: There was a history of peptic ulcer four years previous to admission.

DR. ALEXANDER: There is no record of pain or other symptoms of peptic ulcer since that time.

DR. MASSIE: The patient probably had a hemorrhage from an old peptic ulcer. The acute disease may have brought this on.

DR. ALEXANDER: Is it possible for a peptic ulcer to perforate without having recently produced pain?

DR. LLEWELLYN SALE: I think it is possible that a patient with an ulcer may have a hemorrhage and perforation without previous gastrointestinal pain.

DR. ALEXANDER: Dr. Cook, what do you think?

DR. JEROME COOK: I agree with Dr. Sale.

DR. ALEXANDER: Dr. Scheff, how do you feel about the possibility that a peptic ulcer may, under the stress and strain of a severe intercurrent infection, progress to hemorrhage and perforation?

DR. HARRY SCHEFF: I think this man had a peptic ulcer and that this ulcer could have been responsible for the hemorrhage and other abdominal signs.

DR. SHERWOOD MOORE: What about the patient's prostate gland?

DR. ALEXANDER: It was large and tender. Do you think that the patient may have had a pulmonary embolism?

DR. MOORE: There might have been a prostatic abscess with secondary infection in the lung.

DR. ALEXANDER: What about gastrointestinal infections? We have said nothing about typhoid fever.

DR. HARFORD: The patient had many signs and symptoms in keeping with a diagnosis of typhoid.

DR. ALEXANDER: His temperature was similar to that of typhoid patients.

DR. HARFORD: He gave a history of drinking unpasteurized milk and well water. He also had a slow pulse.

DR. ALEXANDER: He had headaches, slow pulse and a cough. Dr. Goldman, may one have typhoid pneumonia with such symptoms?

DR. GOLDMAN: Yes, one may also have a pneumonia in the course of typhoid fever, due to infection with the pneumococcus. In true typhoid pneumonia a pleural effusion is unusual.

DR. ALEXANDER: Would one expect to find typhoid bacilli in the sputum?

DR. GOLDMAN: You may find them in the sputum but their absence would not rule out typhoid pneumonia.

DR. ALEXANDER: He had hemorrhage and signs of perforation which go with typhoid fever. The only difficulty is that he vomited blood, indicating that there must have been an ulcer in the duodenum. What other observations are against a diagnosis of typhoid fever? The spleen was not palpable. The bacteriologic tests were negative. Is the titer of 1:40 in the agglutination test significant?

DR. WOOD: I do not think that a 1:40 titer is sufficiently high to be of significance. As you mentioned, the patient vomited blood, and that is very

much against the diagnosis of typhoid fever. Also chills are rare in typhoid fever.

DR. HAGEMAN: I think that viral pneumonia should be considered because of the leukopenia, bradycardia and negative bacteriologic findings.

DR. WOOD: In viral pneumonia pleural effusion is rare and the physical signs rarely are those of consolidation.

DR. ALEXANDER: He had an agglutination titer of 1:40 against *B. proteus* OX19. May we rule out typhus fever?

DR. WOOD: Typhus fever seems very unlikely. I think we should mention the possibility of tuberculosis, although it too seems unlikely.

DR. ALEXANDER: Tuberculosis must always be considered. Tuberculosis may lead to ulceration of the gastrointestinal tract and perforation.

DR. GOLDMAN: There is no previous history of cough and the lungs tended to clear. Further, perforation of the gastrointestinal tract is rare in tuberculosis.

DR. ALEXANDER: The history states that chills and fever occurred. That is extremely rare in tuberculosis unless there is secondary infection.

DR. WAYNE MACFARLANE: I would like to ask if special media were used in the cultures of the sputum.

DR. EDWARD REINHARD: No, only the usual media were used.

DR. ALEXANDER: In concluding this discussion, I really do not think that we have sufficient evidence for establishing a diagnosis with any assurance. Typhoid fever has much in favor of it. Tularemia with pneumonitis is also tenable. If the abdominal signs are caused by tularemia, we have a case that is almost unique, one in which there is ulceration of the upper gastrointestinal tract with bleeding and perforation. Dr. Wood, what is your diagnosis?

DR. WOOD: In my opinion, this patient had a peptic ulcer of the gastrointestinal tract and tularemia.

CLINICAL DIAGNOSIS

Viral pneumonia.

Perforated peptic ulcer.

DR. ALEXANDER'S DIAGNOSIS

Tularemia.

Perforated peptic ulcer.

DIAGNOSES BY STUDENTS

Tularemia, 28.

Tularemia and perforated peptic ulcer, 1.

Typhoid fever with perforation, 32.

Typhoid fever and viral pneumonia, 1.

ANATOMIC DIAGNOSIS

Tularemia.

Tularemic pneumonia of all lobes.

Serosanguinofibrinous pleurisy, bilateral.

Focal necroses in lymph nodes, liver and spleen.

Chronic gastric ulcers with hemorrhage and perforation.

Acute serofibrinous peritonitis.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: We did not isolate the organism from the tissues of this patient but the histologic changes were characteristic of tularemia. The pneumonia involved all of the right middle and lower lobes and parts of other lobes.

There were two typical chronic peptic ulcers in the pyloric part of the stomach. One of these eroded a large artery and perforated into the peritoneal cavity. Microscopic study of the edge of the ulcers failed to show a lesion identifiable as caused by *P. tularensis*. Stains for bacteria in the ulcer were also negative.

SPECIAL ARTICLE

YESTERYEARS IN REVIEW

M. G. SEELIG, M.D.

ST. LOUIS

I stand before you in an uncertain mood of hesitancy and doubt. I am asked not to instruct but to entertain. Specifically, I am asked to reminisce. When I protested to the spokesman, Larry Keyes, that, through the years, I had been bored so often and so inexpressibly by reminiscers that I had developed almost a phobic disinclination to talk about the past, Larry, practicing his attractive art of low voiced and sweetly intriguing blandishment, made it delicately plain to me that I was so well fitted, because, after all, I was among the oldest members of the Surgical Society.

This business of slipping into the elder group is an interesting transition. One does not have to be familiar with Cicero's essay on old age in order to appreciate the fact that a weight of years carries with it some advantages. Not the least of these benefits is the breathing space that accompanies the accumulating years. Although I have all too little of it, in contrast with the past I now do have a precious large amount of leisure—at least a partial break in the remorseless and meaningless urgencies of the twentieth century pace. One of this country's recent ambassadors to France was an elderly, genial and accomplished gentleman who appreciated the golden face of the shield of old age. He was telling a group of his cronies how the partially defunct old barons and roués of France were having their vasa deferentia ligated and divided in the frantic hope for rejuvenation. A friend of mine in the group of listeners said: "Ambassador, did you ever feel tempted to have the operation done on yourself?" "Who? I?" replied the Ambassador, "why I am so happy in the thought that the fires of passion are burned out, that I would not risk rekindling them—not for a king's ransom."

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Of course, there is a stage of old age that is not so pleasant. Shakespeare describes it in the Falstaffian "moist eye and dry hand, yellow cheek and white beard, decreasing leg and increasing belly, broken voice and short wind, double chin and single wit, and every part about you blasted with antiquity." But there is always a bit of sly joy in contemplating the youngster's irreverence for the oldster's supposedly failing mental and physical equipment. A week after my sixty-fifth birthday, one of my good friends consulted me regarding one of his patients. After listening to a detailed recountal of symptoms and physical signs, I said: "Nothing doing. You're up against an exploratory laparotomy. Have you thought of that?" "Yes, I have," said my young colleague, "but I forgot to tell you that I hesitate to operate, because this old buzzard is 65 years old."

But I have not in mind this evening to expound the subject of gerontology. From that particular angle, my thinking, for many years, has been influenced chiefly by the idea that I must not hang on too long by my teeth. Early in my professional career, I read the story about Professor Edward Christian of Cambridge University and I have always treasured it as something to be remembered. Dr. Christian would neither die, resign nor release his clutch on authority. Finally, as all good men must, when he was well past 80, he died. His colleague, Professor Henry Gunning, wrote the following epitaph for the departed: "Professor Edward Christian died in 1823, in the full vigor of his incapacity." If I mention old age at all, it is merely in order to introduce my real topic. As I became conscious of the progressive flattening of my crystalline lenses and the development of just the suspicion of an intention tremor and a noticeable loss of that buoyancy of action and spriteliness of disposition which characterizes the ideally effective surgical life, I decided to follow, in part at least, the example of Voltaire's character, Zadig, who retired from the world of things to the banks of the Euphrates to mull over life. In my mulling, I passed in review the numerous procedures that I, as a surgeon, during my salad days, and later in life, had seen developed, practiced, enthusiastically recommended and then discarded. In other words, I purpose, this evening, to explore the junk heap of surgical discards. I hope, with deep earnestness that my comments will not be construed as mere flippant and captious criticism, because, in truth, I make them only with the idea of demonstrating that surgery always has been and always will be an art and science resting on the principle of trial and error; and that surgeons, in some measure at least, must advance as do armies, over their own dead and wounded.

Nor would I have it inferred that I concern myself this evening only with surgical technic. Surgical thinking has changed markedly in fields other than the purely technical ones. For example, twenty-five years ago, one of the most commonly performed operations was cervical adenectomy for tubercu-

losis of the lymph nodes of the neck. That operation now is practically never seen because present day thinking about, concept of, and therapeutics for that disease have changed. Likewise, thinking has changed regarding the necessity of conserving the vitality of patients. In the early days of my internship, a patient was prepared for an abdominal operation by being plastered, overnight, with a burdensomely heavy green soap poultice, reaching from one side of his abdomen to the other and from his ensiform cartilage to his vox populi. Just before operation, this was removed and he was almost chilled to death by an ether scrub, followed by alcohol and bichloride of mercury. All this, however, was merely the more or less innocent preliminary to a major felony because, twelve hours before operation, he was given 3 grains of calomel in series, which meant $\frac{1}{2}$ grain every half hour. This was followed by an ounce of epsom salts, also administered in series of 2 drams at a time. After this came a series of green soap enemata, two high and two low. I have come to feel more and more certain that at least some of the present day lowered operative mortality is referable to the heightened regard for the human body as an integrated machine.

At about this same time, the beliefs were more or less prevalent that circumcision would cure certain cases of idiopathic epilepsy, that amputation of the clitoris would render the same sort of service in hysteria and other neuroses of the fair sex; that oophorectomy might ameliorate inoperable cancer of the breast, and that orchidectomy would cure benign hypertrophy of the prostate. It almost seemed as if some fiend incarnate were prodding the minds of surgeons in order to induce them to levy tribute not only on the germ plasm itself, but also on its accessories, in an attempt to emasculate a civilization already headed toward spiritual disintegration. But contemplate for a moment the ironical spin of the wheel of Fate by which surgery is now right back to the point at which she is practicing again the formerly discredited therapeutic castrations for cancer of the female breast and for malignant disease of the prostate.

It was during this same era that the operation of gastroenterostomy was developed. In a comparatively short while it had established itself as a most valuable procedure. Then the horned head and forked tongue of *Furor operandi* appeared on the scene, leading men to apply this useful operation with such zeal that, if the man of the street eructated, however unobtrusively and politely, within earshot of a surgeon, he ran the grave risk of being gastro-enterostomized, forthwith, on the spot. Into this chapter also irony has slinked with drooling glee to watch the latter day surgeons develop a safe operation for unhooking the previously unnecessarily and disastrously hitched viscera. There seemed to be abroad in the land, in those days, a phrenetic tendency to tie organs up in some way or another—surgeons did gastropexies and gastroplications, mesenteric reefings, colonic fixations and nephropexies up to a point at which these

poor, inarticulate organs almost could be heard voicing a visceral agony of protest.

The younger surgeons of today pay scant attention to that thin, transparent, delicately veined membrane which covers the cecum and extends upward for a varying distance on the colon. A fellow Missourian, the late Dr. Jabez Jackson, of Kansas City, became much interested in this structure and, therefore, with that flair for poesy, which so often inspires surgeons, it was called Jackson's veil. There was always some uncertainty regarding the origin of this structure, but for me, I was willing to cling ever passionately to the poet and assume merely that it was "by Nature's own sweet and cunning hand laid on." The interesting thing is that this innocent, harmless, diaphanously delicate and feeble structure suddenly became a focus for onslaught. Surgeons, with inexplicable zeal, set about to tear off this veil of mystery, leaving behind countless bleeding cecums and colons that cried out against the insults while they struggled with enteric bravery to continue functioning in spite of surgical brutality.

Imagine to what length the vagaries of the human mind may lead by pondering over the thought for a moment that, under the guidance of Lane of England and of Reed of this country, surgeons, in fairly carnivorous fashion, took to ripping out colons for such simple disease as chronic constipation! As though impelled by the accumulated malignity of the ages, surgeons spent their surgical animus on the inoffensive colon. Obsessed with zeal to rid humanity of a malodorous cloaca, we became utterly unmindful of the fact that Almighty God never intended the colon to distill eau de cologne.

In the spirit of progressive zeal, so characteristic of the surgeons' guild, activities were not limited to the abdomen. With one grand gesture, it was decided to wander farther afield and to lay low the specter of gangrene of the extremities. The cure rested on the principle of making the veins serve as arteries; in other words, to reverse the circulation. This, of course, would have been all right had it not been for the simple fact that, in man's biologic ascent from primordial slime and ooze, arteries and veins had evolved to preside respectively over arterial and venous functions. Insurmountable barriers to any attempt at reversal existed in the valves and the thin walls of the veins; then too, the fact was overlooked that if the blood, with the full force of the heartbeat back of it, has difficulty coursing downward through a thickened artery, it would necessarily, after it has lost much of the heartpush, encounter greater difficulty after reversal, in traveling against gravity, upward, through that same thickened artery; but such insignificant details were cavalierly dismissed. Operative failures finally bludgeoned surgeons into abandoning this folly, thus demonstrating that the Lord now and then lends ear to the prayer uttered by Robert Louis Stevenson and "stabs our spirit broad awake."

And what is there to be said about the surgery of focal disease? Over what a wide terrain does this chapter reach! From the tonsil in its position of zenith in the human anatomy to the humble prostate, in its unesthetic site of nadir. Practically all of those present have lived through the era of so-called "ectomies" or amputations of everything that could be enucleated, extracted or otherwise removed as a supposedly cryptic focus of disease. Until the great Billings, who first fathered focal infections, began to anathematize against the wholesale incrimination of these often unseen and almost always unproved depots of disease, surgeons, emulating the bold knights of old, jostled right merrily against all suspected pockets of hidden infection.

It is not my purpose to go on at length raking in the embers of yesteryears, in order to pile circumstance on circumstance, and proof on proof. I might go on at much greater length telling those who do not know, and refreshing the minds of those who do, how the right hearts of patients were strained in shock with our massive intravenous saline transfusions and how, in treating that same condition, flagging hearts were compromised with digitalis and adrenalin or encompassed the patient in a pneumatic suit that could have served no possible purpose save a bad one. Or I might tell of many bloody procedures that have been abandoned in favor of radiotherapy—and that with much profit; or of many more procedures that are now writ large in the chapter of trial and error; but in the first place, time would not permit such an extensive survey and, in the second place, I might be creating the impression that wisdom is now for the first time in history beginning to crystallize in moderns. I am sure that all will agree with me in my subscription to the doctrine of old Sir Thomas Browne that "the hypothesis of yesterday is the theory of today, the accepted doctrine of tomorrow and the fallacy of the future." The historian Lecky says, somewhere, that speculative opinions prevail not by weight of argument but rather by a predisposition to receive them. Not many are endowed as the great experimentalist Faraday was said to have been, with the ability to "smell the truth." Men of science will always follow with advantage the advice John Hunter gave to Edwin Jenner: "Don't think—try."

Surgeons of today are, of course, still trying the new, just as if they were not mindful of the fact that the hope of today may prove to be the frustration of tomorrow. Surgery is still in the era of trial and error, and one must be mindful always of the fact that the debit column of his own error account looms large with possibility. This type of inference is reinforced if one ponders thoughtfully over the very modern chapter of sympathectomy. Some future surgical sage may comment as critically on present day surgical attempts to influence angina pectoris, the angic spasms and spastic birth palsy as I am here criticising my forebears for their various surgical enthusiasms. Always the story is the

same—a story that, as usual, found its first expression in the mind of the poet when he said:

“And now the torch of truth is found,
It only shows how far we strayed.”

I am anxious to leave the thought, not that the surgical junk pile is monstrously and tragically high, but that surgery is in the high place that it occupies today because it is traveling its course *per aspera ad astra*, through difficulties, to the stars. Of course, even though most cannot smell the truth, all can and should attempt at least to sniff for it. In contemplation of the false judgments of the past and those that are in the making in the present, there is a moral, and it is just this: When surgeons become uncritically trusting, when they are unwilling to suffer the essential inconvenience and even the pain of hard thinking, when they accept dogmas indiscriminately at face value, when they fail to recognize the potency of healthful doubt and skepticism, when they sacrifice independent thought on the altar of false authority—when they are guilty of these lapses, then something happens that hurts surgeons and patients alike.

4954 Lindell Boulevard.

ABSTRACTS AND DIGESTS

BRONCHIECTASIS

Symposium on Bronchiectasis. Paul H. Holinger, H. M. Riggins, William E. Auspach, Joseph Brenne-
mann, Francis L. Lederer, Louis H. Clerf, Michael
E. DeBakey and Alton Ochsner. *Dis. Chest.* 9:1-78
(Jan.-Feb.) 1943.

Bronchiectasis is the most common chronic disease of the lung, producing marked disability, both physical and mental, and death far in advance of expectancy. It is a disease known for many years but only in recent years has it been well studied. Of the many theories of its origin, bronchopulmonary infections in early childhood are the best proven causes. Atelectasis, resulting from retained secretions and from stenosis produced by such infections begins the cycle of pathologic changes that finally give rise to fibrotic change in bronchial walls and dilatation and infections. Chronic sinusitis, commonly associated with bronchiectasis, is thought to be secondary in most instances. Once established, the process is not reversible and goes on to a fatal termination. The diagnosis of bronchiectasis is not difficult if a good history be taken, the chest examined carefully and lipiodol roentgen ray studies are made. Every case, if possible, should have bronchoscopy. The best treatment is prophylaxis which is better care of the bronchopulmonary lesions of early childhood. After the disease is established, medical treatment is of no avail. Various palliatives may produce temporary relapse but no cure.

There is only one method of success, surgery as early as possible. Operations done early in life

result in permanent cure. The operative mortality by good surgeons is as low as 3 per cent.

H. L. MANTZ, M.D.

EXPECTORANT ACTION OF IODIDES

Studies of the Expectorant Action of Iodides. Louis Tuft and Nathaniel M. Levin. *Am. J. M. Sc.* 203:717-722, 1942.

The bronchial secretions were collected through the bronchoscope and were examined for idoine after the intravenous administration of from 15 to 31 grains of sodium iodide just after the insertion of the bronchoscope in some and after the oral administration of 60 grains of potassium iodide just before the insertion of the bronchoscope in others. Specimens were withdrawn every five minutes during the time feasible to retain the bronchoscope. Iodine appeared in the bronchial secretion between fifteen and twenty-five minutes. The bronchoscope could not be retained long enough in every patient to determine the time of disappearance but in three instances it was present at thirty, thirty-five and forty minutes respectively. In one patient little difference was observed in the time of appearance and disappearance when 15 grains of sodium iodide, on one occasion, and 31 grains on another were given intravenously.

Saliva obtained simultaneously was examined for iodine in four patients. In two it was present in ten minutes and the other two in twenty minutes. Urine specimens were obtained at intervals in four patients after the administration of sodium iodide intravenously. Iodine appeared in about ninety minutes and was present variably up to five hours. There were no significant differences in the time of the appearance of iodine in the bronchial secretions between the intravenous and oral administration. Salivary excretion occurs promptly and urinary excretion is delayed when sodium iodide is given intravenously, which may indicate that the salivary glands and bronchi act as selective excretory organs for this drug and that urinary excretion follows resorption from the bronchi and gastrointestinal tract. It was not possible to determine whether or not the bronchial secretions were increased by the administration of iodides or whether there were changes in the bronchial mucosa.

This is the first demonstration of iodine in the bronchial secretions of human beings. Such excretion probably accounts for the efficacy of iodides as expectorants.

C. H. EYERMANN, M.D.

MENINGOENCEPHALITIS

Meningoencephalitis in Man caused by the Virus of Lymphogranuloma Venereum. A. B. Sabin and C. D. Arnig. *J. A. M. A.* 120:1376 (December 26) 1942.

From a case of severe meningoencephalitis in a 25 year old Negro, the virus of lymphogranuloma venereum was isolated by the intracranial injection of mice and by the intracutaneous and subcutaneous injection of guinea pigs. The virus was proven by

these experiments to be present in the spinal fluid as well as in the inguinal lymph nodes and in minute shallow ulcers on the penis. The clinical picture was not suggestive of lymphogranuloma venereum in its usual form. Complement fixation tests on the patient's serum were positive with lymphogranuloma venereum antigen. The Frei test was positive in only one of many tests and then with only one of four human antigens. On the second day of acute illness, the spinal fluid contained 4,000 cells, 25 per cent of which were neutrophils. In the course of the disease the cell count gradually fell and neutrophils disappeared, leaving only mononuclear cells. The patient made a complete recovery, following sulfathiazole therapy, and was able to return to work five months after the onset of his illness.

It is pointed out that the differentiation of this type of meningoencephalitis from other virus infections of the nervous system is of particular importance because it is the only type in which there is reason to expect a therapeutic effect from the administration of the sulfonamides.

Reviewer's Comment. The virus of lymphogranuloma venereum is associated with the presence, in infected cells, of clusters of minute "elementary bodies" which probably represent the infective agent. Recent studies, notably those by Rake and his coworkers,¹ strongly suggest that this virus is one of a large group of viruses, closely related morphologically and antigenically, including (1) typical psittacosis virus, (2) a virus isolated by Eaton and coworkers² from cases of atypical pneumonia, (3) the meningopneumonitis virus of Francis and Magill,³ (4) a virus recovered from thiamin-deficient pigeons⁴ and (5) a virus recently isolated from cats suffering from a disease known as distemper, and believed, on epidemiologic and serologic evidence to be a cause of atypical pneumonia in man. The ingenuity of virologists will be severely taxed in working out the exact relationship between these closely related viruses and the role which they play in the pathogenesis of a variety of diseases in birds, lower mammals and man.

HENRY PINKERTON, M.D.

1. Rake, G.; Eaton, M.D., and Shaffer, M. F.: *Proc. Soc. Exper. Biol. & Med.* **48**:528, 1941.

2. Eaton, M.D.; Beck, M.D., and Pearson, H. E.: *J. Exper. Med.* **73**:641, 1941.

3. Francis, T. Jr., and Magill, T. P.: *J. Exper. Med.* **68**:147, 1938.

4. Pinkerton, H., and Moragues, V.: *J. Exper. Med.* **75**:575, 1942.

5. Baker, J. A.: *Science* **96**:455, 1942.

NUTRITIONAL REQUIREMENTS IN INFANCY

Nutritional Requirements in Infancy and Childhood. Allan M. Butler. *Am. J. Dis. Child.* **5**:898 (November) 1942.

Butler in a comprehensive article summarizes present knowledge on the nutritional requirements in infancy and childhood. Much space is devoted

to the subject of vitamins in pediatrics. However, in this review I must limit my task to his formula for the artificial feeding of infants. To quote: "At the beginning of the second week, an adjustable formula is substituted for the one prescribed during the first week. The prescription of this formula is very simple, one third of the total requirement is provided by added sugar. The other two thirds of the caloric requirement is provided by milk. Assuming a caloric requirement of 55 calories per pound, this means that an 8 pound infant $8 \times 55 \times \frac{1}{3}$, or approximately 150 calories of sugar, or about $1\frac{1}{4}$ ounces (35 gm.). Because cow's milk has 20 calories per ounce (30 cc.) the milk for an 8 pound infant is $8 \times 55 \times \frac{2}{3} \times \frac{1}{20}$, or 15 ounces (450 cc.), which is just one tenth of the figure for the calories provided as sugar. So the only arithmetic involved is multiplying the weight in pounds by 55 and dividing this requirement by 3 to obtain the number of calories of sugar and pointing off one decimal place on this number to obtain the number of ounces of milk. The milk and added sugar are brought to a boil and let simmer for three minutes. Boiled water is then added to make a total volume of $2\frac{1}{2}$ ounces (75 cc.) per pound of body weight. The total formula is divided into 6 bottles, and the infant is fed every four hours."

Comment. Many arithmetical rules for feeding the infant have been devised during the last forty years, but none of them have become generally adopted. Butler's arithmetic is simple to the pediatrician but will scarcely be useful to the practitioner who does not think in terms of calories. For years the practitioner has been taught to dilute cow's milk one third and add 4 or 5 per cent of sugar. The mixture should be boiled. This supplies an ample quantity of protein, fat, carbohydrates, minerals and even water during the winter time. In the summer, additional water must be administered. Therefore, the standard formula now is: two thirds cow's milk, one third water, with 4 or 5 per cent sugar added. At first, the quantity is cautiously restricted, but as soon as a bodily adjustment to the artificial food has been attained the baby is allowed sufficient quantity to allay his sense of hunger. It is immaterial whether he is fed four, five or six times a day. An increased interval necessitates an enlargement of the quantity given at each feeding.

The mathematical rules of Dr. Butler are ingenious and yield formulas which are adequate in every way, but do not yield results which differ from the result of the standard formula: two thirds milk, one third water and 4 per cent sugar.

JOHN ZAHORSKY, M.D.

EARACHE

Earache: The Common Causes and Probable Nerve Pathways. G. Edward Tremble. *Ann. Otol. Rhinol. & Laryng.* **51**:1016 (December) 1942.

In dealing with earache it is always well to keep in mind that it is deceptive and occasionally

treacherous because the severity of the pain may bear little or no relation to the gravity of the lesion which causes it. The term "earache" usually suggests a lesion in or about the ear, and one is apt to forget that the pain may be due to any one of many extrinsic causes, hence, the terms "referred pain" and "reflex otalgia."

Irritation of the sensory nerves of the ear in regions far remote from this organ sometimes causes severe pain. This type of earache, without any affection of the ear itself, is called reflex otalgia. For example, ear pain from the teeth and tongue in all probability travels by way of the fifth cranial nerve, ear pain from the tonsils and eustachian tube via the ninth nerve and ear pain from the throat and larynx through the tenth nerve.

Earache is a general term but on questioning it is often possible to ascertain whether the pain is in front of the ear, within the ear itself or in the region behind the ear. Irrespective of where the pain is situated, one automatically thinks of the distal sensory supply of the fifth, seventh, ninth and tenth nerves or the cervical roots although the peripheral lesion itself may not be painful.

As mentioned, otalgia is caused by an affection of the sensory nerves supplying the organ of hearing. In the same manner, earache may occur from an infection in the sinuses, especially in the posterior ethmoidal and sphenoidal. The most frequent cause of otalgia is of dental origin. Besides caries, it must be remembered that an unerupted wisdom tooth is occasionally the cause of an intractable earache. Patients suffering from acute and chronic affections of the tonsils, tonsillitis, peritonsillar abscess (quinsy) frequently complain of otalgia. For a few days after tonsillectomy there may be a complaint of earache, and this is felt as a rule only during swallowing. Lesions of the palate or the pharynx, especially in the neighborhood of the orifice of the eustachian tube, often produce pain deep in the ear and occasionally growths of the tongue and tonsils give rise to earache as their first and only symptom. The glossopharyngeal nerve is the one involved in these cases.

Ulcerative conditions, such as malignancy or tuberculosis at the entrance of the larynx or upper part of the trachea, may cause reflex otalgia due to irritation of the superior laryngeal branch of the vagus.

Earache may be due to intrinsic or extrinsic causes. By intrinsic is meant organic lesions within the external auditory canal, the middle ear, or mastoid cells, giving rise to pain in the ear. The condition usually can be seen at once by means of the aural speculum or otoscope. Extrinsic causes are those which produce pain in the ear reflexly by lesions remote from the ear itself. The drum in these cases shows little or nothing, usually a normal picture. Ulcerations and disease about the head and neck are responsible for the majority of cases of reflex otalgia. The source of these pains is almost always explained by examining (1) the buccal cavity, (2) the nasopharynx and (3) the perilaryngeal region. Of these the commonest are affections of the teeth, tongue, tonsils, tubes, throat and trachea.

J. L. MYERS, M.D.

SULFONAMIDES IN OTOLARYNGOLOGY

The most spectacular advance in the field of otolaryngology in recent years has been the introduction of sulfonamide drugs. Not only are these drugs responsible for a marked decrease in the incidence of surgical mastoiditis^{1,2,3} but, also, they must be credited with the lowered mortality from such complications as meningitis and petrositis.^{4,5,6}

Because the signs of complications and, indeed, of otitis media and mastoiditis have been radically changed in cases treated with sulfonamides, many writers have referred to their "masking effects" and because of such "masking" have discouraged their use.⁷ It should be borne in mind, however, that benefits that accrue from the proper use of the sulfonamides far outweigh all possible difficulties from masking of symptoms and signs. Otologists should learn the new features of diseases of the ear when sulfonamides are used rather than take the defeatist's attitude of blaming their difficulties on the "masking effects" of the drugs.

It is true that in sinusitis the administration of sulfonamide drugs by mouth has shown but little benefit in chronic cases. There is no good evidence available, however, on the question of whether or not sulfonamides used adequately and early in acute respiratory infections would prevent the occurrence of chronic diseases of the sinuses.

In inflammation of the throat, tonsillitis, peritonsillar phlegmon, pharyngitis and nasopharyngitis, the sulfonamides have proven of marked benefit. Tonsillitis, and peritonsillar inflammations particularly, frequently subside without abscess formation and need for surgical intervention. When these drugs are used, emphasis must be laid on early administration and adequate dosage.

The failure of the sulfonamides in the hands of many otolaryngologists undoubtedly has been due to starting their use too late, to inadequate dosage and to the too short period of time over which these drugs have been administered. Hartmann^{4,5} has shown how frequently relapses have occurred in cases of meningitis when the sulfonamide therapy has been discontinued too soon.

The proper administration of sulfonamides requires: (1) large doses in the early stages of the infection so that the blood concentration may be raised as quickly as possible; (2) maintenance of adequate blood concentration for sufficient time to make possible the eradication of the infection. A decreasing temperature alone is not an indication for the discontinuance of the use of these drugs.

The local use of sulfonamides in surgery of the ear

1. Boies, L. R.: *Ann. Otol. Rhinol. & Laryng.* **51**:601 (September) 1942.

2. Windham, R. E.: *Texas State J. Med.* **38**:451 (November) 1942.

3. Lindsay, John R.: *Ann. Otol. Rhinol. & Laryng.* **50**:159 (March) 1941.

4. Hartmann, A. F., et al: *J. Pediat.* **21**:435 (October) 1942; Hartmann, A. F., et al: *J. Pediat.* **21**:591 (November) 1942.

5. Williams, H. L. et al: *Laryngoscope* **52**:835 (November) 1942.

6. Richards, Lyman G.: *Laryngoscope* **52**:317 (September) 1942.

7. Cirillo, A. A.: *Arch. Otol.* **36**:541 (October) 1942.

and nose^{8,9} has shortened convalescence following mastoiditis and radical sinus surgery and promoted early healing.

The otologist who disdains the use of sulfonamides in his practice throws away one of the most valuable instruments in his armamentarium.

THEODORE E. WALSH, M.D.

8. Currier, W. D.: *Ann. Otol. Rhinol. & Laryng.* 51:955 (December) 1942.

9. Furstenberg, A. C.: *Laryngoscope* 53:93 (February) 1943.

THEOPHYLLIN DERIVATIVES

Bronchial Antispasmodic Actions of Theophyllin Derivatives, Including Effects of Continued Administration. F. P. Luduena. *J. Pharmacol. & Exper. Therap.* 75:316-329, 1942.

The comparative bronchial antispasmodic actions of aminophyllin (theophyllin ethylenediamine), of theocin (theophyllin sodium acetate) and of epinephrine were determined in the isolated lungs of guinea pigs and intact lungs of dogs.

Both aminophyllin and theocin dilated the bronchi of untreated isolated lungs and prevented or relieved variably the bronchospasm resulting from anaphylactic shock, histamine, pilocarpine and barium. Epinephrine was at least 1,000 times more effective in antagonizing broncho-constriction in perfused lungs.

The theophyllin derivatives were alike in their ability to relieve the bronchospasm of histamine and pilocarpine in the intact lungs of dogs but, in these instances, epinephrine was at least 3,000 times more efficient in producing bronchodilatation.

It was further shown by competent experiments that the bronchodilator effect was due to direct depression of bronchial smooth muscle.

Daily intravenous injections in rabbits for one month, of doses of aminophyllin comparable to those used therapeutically in the human being, produced no demonstrable symptoms and no anatomic changes in the lungs, liver, brain and kidney.

The highest tolerated dose for rabbits, 100 mg. per kg. body weight (which is many times the comparable therapeutic dose in the human being), injected similarly was tolerated symptomatically but, histologically, caused evidences of slight chronic meningitis and a small amount of granular coagulum and a few hyaline casts in the renal tubules.

Comment: Xanthine derivatives have been useful in wheezing dyspnea for a long time. Caffeine (readily obtained as strong black coffee), theobromin, theophyllin and theophyllin sodium acetate will relieve mild chest oppression. Aminophyllin intravenously often gives dramatic and complete relief for the severer prolonged paroxysms especially when adrenalin is no longer effective. It is the clinical impression that these drugs are more effective for individuals in and past the fourth decade of life.

This paper confirms the previous experimental work which tended to show that the effect of theophyllin derivatives was exerted directly upon smooth muscle. It allows the inference that large doses are somewhat injurious and that they might

aggravate acute or chronic inflammatory states of the kidney or meninges. This would not contraindicate their use in an emergency.

C. H. EYERMANN, M.D.

GRANULOMAS

Dusting Powder Granulomas Following Surgery. Wm. McKee German. *Surg. Gynec. & Obst.* 76:501 (April) 1943.

The author calls attention to the fact that talcum powder, hydrated magnesium silicate, used so extensively and often so carelessly as a glove and dusting powder is capable of producing granuloma in tissue.

Occasionally the pathologist is called to the operating room by the surgeon for a diagnosis of small peritoneal lesions ranging in size from just visibility to the naked eye up to 2 mm. in diameter. To the surgeon, invariably, tuberculosis or carcinomatosis is suggested. These lesions are described as discrete and sometimes may give the appearance of coalescence. They may be found in the appendix, the peritoneum of the uterus or the coils of the intestine. There is no free fluid in the abdomen and adhesions may or may not be present.

He states that inquiry into this type of case will reveal that almost every one of the patients has had a previous laparotomy.

The author states that routine histologic sections of the lesions reveal tiny granulomas that may resemble tubercles and have been mistaken for such. If the lesions are scrutinized carefully by a polarized light, silicate crystals will be seen to stand out in brilliant illumination. This is not seen with ordinary illumination. Polarized light has been found so useful that he has come to employ it in all granulomatous and cicatricial lesions.

Fifty consecutive, unselected hospital patients previously operated upon and presenting talcum granulomas were subjected to careful study. The purpose of these studies was to correlate if possible the number of talcum granulomas. A few of the interesting findings were the following: (1) There was no apparent correlation between the symptoms and the talcum. (2) It was observed that adhesions were more abundant in patients who had had more than one previous operation and the more extensive the surgery, the more abundant the adhesions. (3) Of the fifty patients presented, forty showed intra-abdominal granulomas. (4) Every patient showing intra-abdominal granulomas showed adhesions and there was a constant association between the presence of silicate and adhesions.

The author carried out various experiments in guinea pigs and rabbits producing silicate granulomas similar to those found in humans.

In his summary and conclusion the author states that "while talcum is chemically inert it promptly produces a marked tissue reaction in the form of foreign body granulomas.

"The talc, once immobilized in the granulomas, remains permanently in the tissues.

"This process is an attempt to immobilize the crystals and is a protective mechanism.

"This protective mechanism may interfere with normal healing processes depending on the site and the abundance of the granulomas which are present.

"Talc, *per se*, in the abdomen, in the absence of injury to the peritoneum, is quickly removed from the peritoneal cavity, immobilized, and covered by serosal cells, without the formation of an exudate and without adhesions.

"Adhesions do not develop without some form of traumatization of the peritoneum sufficient to produce exudation of the fibrin.

"Even in the presence of peritoneal trauma and exudation of fibrin, the talc plays a secondary role, in that it is caught up in the fibrin and is incorporated in the adhesions. Thus the developing granulomas may either add to the bulk and density of the developing adhesions or may impede the resolution of any adhesions once formed. In this sense it may be said to contribute to the disability produced by adhesions resulting from surgical operations.

"In surgery we go to great lengths to exclude one type of foreign body—bacteria. Concerning bacteria it may be said that they can be destroyed by the body and that their removal is complete. It is true that they are capable of reproducing themselves. But for dusting powder, it may be said that although it cannot reproduce itself, it is a completely inert foreign body, incapable of destruction or removal and yet capable of producing local tissue reactions. Its reduction to a negligible minimum could be easily achieved by simple precautions."

J. G. PROBSTEN, M.D.

ABNORMALITIES OF ANTERIOR PITUITARY GLAND

Treatment of Abnormalities of the Anterior Pituitary Gland. Joseph C. Aub and David Karnofsky. *New England J. Med.* 226:759, 1943.

"To summarize this mass of new work is difficult. It may be stated, however, that the importance of the pituitary gland is fairly well established in many abnormalities of the endocrine glands. Even though it may frequently be the primary factor, the use of pituitary hormones has, on the whole, been disappointing in therapeutic effects. This is due to the difficulties in obtaining adequate sources and in purification. It is also unwise to use continuous therapy because of the temporary immunity produced by injected pituitary hormones, so that intermittent therapy is imposed. As a result, pituitary deficiencies are now more effectively treated by the use of endocrine hormones derived from the peripheral glands."

A resume of treatment recommended for various clinical disorders follows.

Growth. The use of pituitary and pituitary-like hormones to stimulate growth has been disappointing. Testosterone propionate, from 10 to 25 mg. intramuscularly, biweekly, or methyl testosterone, from 10 to 25 mg. orally daily, are said to be the simplest and probably the most effective way of treating dwarfism. The side effects of this hormone are to be minimized by controlled dosages.

Obesity of Puberty. The authors advise that all cases of obesity be carefully studied for the presence of an organic lesion in the region of the

hypothalamus. There are two subdivisions to this group. (1) The obese child with normal functions—that is, normal basal metabolic rate, normal blood sugar, normal mentality, and history of obesity in the family. Diet alone is recommended for this group. (2) Adiposogenital dystrophy. This group of obese children has been shown by the senior author to show a low excretion rate of hormones of their sex. They have a low basal rate, normal or retarded bone growth and high sugar tolerance. The treatment recommended is diet, desiccated thyroid and amphetamine (benzedrine sulphate), with added benefits by the addition of gonadotropins or testosterone.

Anorexia Nervosa and Simmonds' Disease. These are undistinguishable clinically, are said by the writers to be differentiated by hormone assays; the urinary excretion of 17-ketosteroids being markedly lowered in Simmonds' disease and unaltered in anorexia nervosa. No specific hormone treatment is advocated in anorexia nervosa. Included in the recommendations for the treatment of Simmonds' disease are chorionic gonadotropin, estrogens and androgens used separately, high salt diet with desoxycorticosterone for adrenocortico deficiency. Thyroid may be administered with caution and frequent feedings are advocated.

Acromegaly. Irradiation of the pituitary gland and usual treatment of the complications as they arise are advocated.

Cushing's Disease. Differential points between this syndrome and primary hyperadrenocorticalism are given. Reports on the effects of irradiation of the pituitary are variable.

Gonadal Dysfunction. Pituitary stimulation has proved discouraging. The use of chorionic gonadotropic hormone alone is of no value but when combined with the pituitary synergic principle, ovulation has been induced. Pregnant mare serum, given ten days postmenstrually, followed by chorionic gonadotropin for ten days, has produced a progestational endometrium in fifteen of a series of twenty-nine cases which they quote. The addition of small doses of estrogens enhances the effectiveness of gonadotropins.

Cryptorchidism. Chorionic gonadotropin, from 100 to 500 international units, three to six times weekly for eight to nine weeks is recommended, with satisfactory results to be anticipated in about 20 to 25 per cent of cases treated. Administration of from 5 to 10 mg. of testosterone propionate with chorionic gonadotropin is said to prove beneficial where either hormone may fail separately.

Diabetes Mellitus. The authors discuss the relationship of the pituitary gland to diabetes mellitus, concluding that this relationship is uncertain. They feel that insulin is the only hormone treatment available.

Hyperthyroidism. Attempts to attribute Graves' disease to overactivity of the thyrotropic fraction of the pituitary gland lacks sufficient evidence in the minds of the authors. They refer to malignant exophthalmus as probably due to excesses of thyrotropic hormone and call attention to the importance of differential diagnosis between this condition and ordinary exophthalmic goiter. They state that the appropriate treatment for malignant exophthalmus is to suppress pituitary activity by the careful balance of thyroid and iodine therapy.

Irradiation. The authors recommend trial irradiation in pituitary tumors always before surgery, the criterion of treatment being remission of symptoms and the salvage of sight.

The article is excellently written and contains 111 references.

DANIEL L. SEXTON, M.D.

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MAY, 1943

EDITORIALS

THE ANNUAL SESSION

The Eighty-sixth Annual Session of the Missouri State Medical Association which convened in St. Louis for a two day session beginning at 2:00 p. m. on April 18 and closing at noon on April 20 was favorably comparable to sessions held in years when physicians were not so busy and members were not out of the state because of military service. The attendance at the session was approximately 550 and the scientific session on Monday was constantly well attended as were the scientific exhibits.

Lt. Col. Curtis H. Lohr, St. Louis, was unanimously elected President-Elect. Dr. A. W. McAlester, Jr., Kansas City, was installed as President at the Tuesday morning session by the presiding President at the St. Louis Session, Dr. H. L. Kerr, Crane.

Other officers elected were Drs. Dudley A. Robnett, Columbia, Buford G. Hamilton, Kansas City, and J. I. Byrne, St. Joseph, Vice Presidents; Dr. R. L. Thompson, St. Louis, Secretary-Editor; Dr. C. E. Hyndman, St. Louis, Treasurer. Drs. R. E. Schlueter, St. Louis, and James R. McVay, Kansas City, were elected Delegates to the American Medical Association with Drs. J. F. Jolley, Mexico, and H. L. Kerr, Crane, alternates. Dr. W. F. Francka, Hannibal, was elected Speaker of the House of Delegates and Dr. John Green, St. Louis, Vice Speaker. Mr. Raymond McIntyre, St. Louis, was elected Executive Secretary, and Helen Penn was elected Assistant Editor. Mr. E. H. Bartelsmeyer, St. Louis, was elected consultant. Drs. H. B. Goodrich, Hannibal, was reelected Councilor of the Second District; Dr. R. B. Denny, Creve Coeur, was elected Councilor of the Fourth District; Dr. R. W. Kennedy, Marshall, was elected Councilor of the Sixth District; Dr. Wallis Smith, Springfield, was reelected Councilor of the Eighth District, and Dr. Paul Baldwin, Kennett, was elected Councilor of the Tenth District.

The House of Delegates adopted amendments to the By-Laws to change the Committee on Public Policy to the Committee on Public Policy and Public Relations and to make two committees of the Committee on Maternal Welfare and Infant Care, one on Maternal Welfare and one on Infant Care. The House of Delegates approved an assessment for 1944 of \$4.00 per member on the recommendation of the Committee on Amendments to the Constitution and By-Laws.

Past Presidents were guests of honor at a banquet on Sunday evening at which Dr. Morris Fishbein, Chicago, was the guest speaker. Dr. H. L. Kerr, Crane, presided at the banquet and presented the President's Address and Dr. A. W. McAlester, Jr., Kansas City, presented the Address of the President-Elect. More than five hundred attended the banquet.

Thirty-nine pharmaceutical and commercial companies exhibited newer products and apparatus.

The St. Louis Medical Society members were excellent hosts throughout the session and on Monday evening entertained members with a buffet dinner and entertainment at the St. Louis Medical Society Building.

The annual meeting of the Committee on Maternal Welfare and Infant Care held on Monday noon had a large attendance. The Committee on Study of Cardiac Diseases also held a noon day meeting on Monday.

Kansas City was selected for the 1944 meeting place.

IT WILL HAPPEN HERE UNLESS—

The following editorial appeared in the March issue of the *Medical Annals of the District of Columbia*. It seems especially appropriate just following the Annual Session of the Missouri State Medical Association and is reprinted that members may have the opportunity of reading it.

"Physicians who are prominent in their medical societies will at some time or other become the object of criticism. More frequently than not it is very mild and nothing to raise the blood pressure. On the other hand, they may be severely—often unfairly—censored by their fellow practitioners. This experience is not uncommon to physicians in important offices. Most of them weather it with no ill effects, others are not so philosophical.

"Criticism usually centers about the motives of the individual rather than his ability. His personality, too, may become irritating with or without explainable cause. The charge of politics is most often heard, and those who complain 'thank God' that they have nothing to do with medical politics.

"Now, of course, not all physicians are severely critical of their colleagues who serve in an official capacity. Fortunately, there are those who understand the difficulties of holding office and the sacrifices involved. They may not be in the majority but

they are a substantial group and the bulwark of any medical society. What is often overlooked by physicians who are not officers of a medical society is their own responsibilities. They are prone to leave all decisions to medical leaders when, as a matter of fact, responsibility for the future of medicine rests to a considerable degree on the shoulders of the rank and file of the profession.

"How does the average member of a medical society meet his obligations? To begin with, he is too frequently indifferent to the problems with which his organization is endeavoring to cope. In fact, he knows so little about them that he cannot discuss them intelligently. He excuses himself on the basis that he is too busy with his own problems. It apparently does not occur to him that his personal welfare is involved in the major issues before medicine.

"He may belong to the 'what-do-I-get-for-my-dues' group which might be described as the thoughtless segment of medical organizations. He never stops to think that if he is not actively interested, he receives nothing in return. Having paid his dues, he lets it go at that, except for occasional attendance at meetings. And this is too bad because medical societies have so much to offer the doctor if he will only exert himself to a moderate degree.

"What then are the obligations of the average member? First of all, he cannot know anything about his organization unless he attends meetings fairly regularly. If he belongs only because of necessity, he is officially a member but not one in spirit. So the first requisite is that he be present not only at scientific meetings but in these times at sessions where the general affairs of medicine are discussed. There is no substitute for his active participation. Otherwise he cannot offer constructive criticism which will improve his organization and make it worth-while to himself and to other physicians.

"Leadership is impotent without support. It may also become incompetent. Elimination of unqualified leaders depends upon an informed membership which is willing to face the facts and which will act when necessary. There are undoubtedly physicians in high places of responsibility who do not belong there. If they have nothing to contribute they should be removed from office. This is no time for second-rate leadership. The best is none too good.

"Physicians on the home front also have a great responsibility to those in military service. Apathy now toward developments in medicine is not keeping the faith with the men who are with the armed forces.

"Summing up, all physicians who have a genuine interest in their profession will meet their obligations to their medical societies in these days by taking an active interest, and will not be among those who criticize without a knowledge of the facts. Unless they do, dark days may be ahead for the medical profession."

NEWS NOTES

Dr. Herbert L. Mantz, Kansas City, attended the meeting of the National Tuberculosis Association Committee on Nominations in New York City on March 8.

Dr. J. I. Byrne, St. Joseph, has been appointed by the Governor a member of the State Board of Health. Dr. Byrne succeeds Dr. L. Paul Forgrave, St. Joseph, who resigned.

Drs. Buford G. Hamilton and Harold L. Gainey, Kansas City, recently were guest speakers before the Sedgwick County (Kansas) Medical Society at Wichita under the auspices of the Kansas Obstetrics and Gynecological Society.

Dr. Herbert L. Mantz, Kansas City, presented a paper on "A Tuberculosis Survey Among Antepartum Patients" at the annual meeting of the Iowa Tuberculosis Association in Des Moines.

The United States Chamber of Commerce has recently formed a National Health Advisory Council to instigate and carry out a nation-wide health conservation program as an aid to the war effort. This educational enterprise has, undoubtedly, as its main objective, the elimination of absenteeism and inefficiency in all types of defense work which can be attributed directly to health conditions. Community cooperation will be solicited to assist war workers and their families in solving the problems of health, diet, illness and nursing care. Accepted and approved health information will be disseminated to business and industrial concerns as well as civic groups for use in this endeavor. The Advisory Council has begun with a membership composed of thirty leading medical and health authorities, headed by Dr. James S. McLester, professor of medicine at the University of Alabama.

A symposium on "Obstetrical Analgesia and Anesthesia" will be presented by the Department of Obstetrics and Gynecology of the University of Nebraska College of Medicine at the University Hospital, Omaha, on May 28, in cooperation with the Nebraska State Medical Association and the Division of Maternal and Child Health of the State Department of Health. The symposium has been designed not particularly to approve the use of continuous caudal anesthesia but to present to the general practitioner a broad view of the dangers of all methods of obstetric anesthesia and analgesia. Guest speakers include Drs. F. S. Hartman, Pathologist, Henry Ford Hospital, Detroit; R. A. Hingson, United States Public Health Service, Staten Island; N. R. Kretzschmar, Associate Professor of Obstetrics and Gynecology, University of Michigan, Ann Arbor; A. H. Parmalee, Associate Professor of Pediatrics, Rush Medical College, Chicago, and members of the faculty of the University of Nebraska College of Medicine.

The Federal government is badly in need of physicians to fill Civil Service positions as follow: Senior Medical Officer at \$4,600 a year; Medical Officer at \$3,800 a year; Associate Medical Officer at \$3,200 a year, in Public Health Service, Veterans' Administration and Indian Service. Physicians also are needed for the Panama Canal at \$4,000 a year. There are openings for Junior Medical Officers (rotating internship) at \$2,000 a year, and Junior Medical Officers (psychiatric resident) at \$2,000 a year. Application forms may be obtained at the Civil Service Commission in St. Louis or at any first class post office in the state. Further information may be obtained from Dr. Frank B. Patterson, Medical Officer for Civil Service Region, 645 Federal Building, St. Louis.

Major Howard A. Rusk, St. Louis, who has been chief of the medical service at the Station Hospital, Jefferson Barracks, has been transferred to Washington, D. C., and assigned to the staff of Brig. Gen. David D. W. Grant, the air surgeon, to be in charge of the recreation and reconditioning program for hospital patients for all army air corps hospitals. Major Rusk initiated a novel program for convalescent soldiers while at Jefferson Barracks whereby they were taught during the period of convalescence by means of lectures, moving pictures and other types of visual education and physical exercises. This program includes instruction in chemical warfare, camouflage, radio, model airplane building, a refresher course in mathematics, a basic course in military discipline and a course for illiterate soldiers. The primary purpose of this program is to make use of the time ordinarily lost during convalescence by giving the men instruction in the technical courses needed by the air forces. This program was initiated at Jefferson Barracks under the supervision of Col. James R. McDowell, commanding officer of the hospital, and Brig. Gen. David D. W. Grant, the air surgeon.

DEATHS

Bachr, John Henry W., M.D., Washington, Medico-Chirurgical College of Philadelphia, 1909; Fellow of the American Medical Association; honor member and past president of the Franklin County Medical Society; aged 66; died June 17, 1942.

Adair, Thomas W., M.D., Archie, a graduate of the Kansas City Medical College, 1885; honor member of the Cass County Medical Society; aged 87; died March 5.

Ball, Henry P., M.D., La Jolla, California, a graduate of the Kansas City Medical College, 1883; honor member of the Jackson County Medical Society; aged 84; died March 10.

Mann, Francis W., M.D., Wellington, a graduate of the Missouri Medical College, St. Louis, 1889; member and past president of the Lafayette County Medical Society; aged 80; died March 11.

Ferrell, William Rhodes, M.D., Belle, a graduate of the St. Louis College of Physicians and Surgeons, 1892; member and former president of the Gasconade-Maries-Osage County Medical Society; aged 75; died March 20.

Died While in Military Service

Davis, Paul Wilson, M.D., University City, a graduate of St. Louis University School of Medicine, 1939; member of the St. Louis County Medical Society; aged 31; was lost at sea on February 26 in discharge of his duties as Base Doctor and Relief Pilot at Pascagoula Base with the Civil Air Patrol.

INCIDENTALLY

FROM THE EXECUTIVE SECRETARY

Appreciation shown by expressing sincere thanks to individuals serving the public good is too often delegated to the role of a lost virtue.—On March 31, fifty-two members of the House of Representatives voted to maintain the standards of medical practice in this state.

Under state medicine it is conceivable that the physician, through taxation, would help pay the medical and hospital bill of some inebriated driver injured in an accident caused solely by his inebriety.

How many are paying any attention to the demands of the changing social organization?—To escape a "lock-step" order under this change it is logical to believe that the medical profession must prove it can and will meet all reasonable demands for service in the field of medicine.

Medicine is not strictly influenced by science alone but is also subject to social forces which are ever changing and thereby requiring continual adjustments.—This situation demands the services of medical statesmen to direct those adjustments relating to medical care.

Is it fair always to take and never give?—Is it not logical to assume that many members of organized medicine are receiving its benefit but contributing nothing in return?—In the main it may be stated that those physicians who complain most of getting so little benefit from organized medicine are, after all, putting in little.—Can one accept the right to criticize if he has nothing constructive to offer as a substitute?

Dr. Fishbein in his address at the Annual Session banquet, April 18, presented information which definitely calls for much thought and study by the medical profession in forwarding "Plans for Post-war Medical Service."

The headquarters office is sincerely appreciative of the advice and assistance given by all committees in promoting the 86th Annual Session.—Many remarks of commendation to the St. Louis Medical Society for the excellent Monday evening entertainment were scattered here, there and yon.

Thanks to all those physicians who assisted in the attempt to show the exhibitors appreciation for their presence at the Session.

Another osteopathic bill has been introduced recently in the House.—Its number, 590, indicates the lateness of its introduction.

MISCELLANY

ADDITIONAL MEMBERS OF THE MISSOURI STATE MEDICAL ASSOCIATION IN MILITARY SERVICE

Adler, Bernard C., Stockton
Benjamin, Durand, St. Louis
Chiarottino, Joseph, St. Joseph
Ganley, William C., Kansas City
Higgins, Robert F., St. Louis
Staehle, Melvin E., St. Louis
Taylor, Edward L., Steele

ST. LOUIS HEALTH DIVISION LABORATORIES OFFER VIRUS DIAGNOSTIC SERVICE

S. Edward Sulkin, Ph.D.

The designation "Infectious Encephalitis" has been recommended for all neurotropic virus diseases until an etiologic diagnosis has been made and the causative virus has been identified by means of laboratory studies. This was suggested because the clinical and epidemiologic manifestations of the infectious diseases caused by neurotropic viruses, excluding poliomyelitis and rabies, are so alike that it is practically impossible to establish the identity of a particular disease without the aid of certain laboratory procedures. The "infectious encephalitides," which embraces a number of distinct diseases of the central nervous system, must be identified etiologically if reliable epidemiologic data are to be obtained and if this group of diseases is to be classified properly.

Knowledge concerning these diseases would be greatly advanced if the physician would make an earnest effort to secure laboratory aid for the identification of the causative virus. Immunologic tests should be carried out, using the blood serum obtained during the early stages of the disease and again after recovery of the patient. The presence of specific neutralizing or complement-fixing antibodies is of particular significance if blood specimens taken during the acute phase are negative and become positive with convalescence of the individual. Although such diagnoses can be made only after the patient's recovery and, therefore, are of no value as a guide in therapy, they are of definite public health value.

The Laboratory Section of the St. Louis Health Division, through the efforts of Dr. Joseph F. Bredeck, Health Commissioner, and Dr. Joseph C. Willett, Chief of Laboratories, has established a Virus Diagnostic Unit designed to render a specialized service to all physicians desiring laboratory assistance in the diagnosis of virus diseases. At present this diagnostic service is limited to the neurotropic virus diseases. The necessary personnel required to conduct these tests is now available. This service, however, may be discontinued in the event of unforeseen developments due to the present emergency. St. Louis physicians are requested to telephone the Virus Laboratory of the St. Louis Health Division (MAin 5560, Station 724 or 247) for specific details concerning collection of specimens.

Research Bacteriologist, Virus Laboratory, St. Louis Health Division.

LEGISLATION

STATE

House Bill No. 85, on March 30, was amended and ordered perfected and printed by a 53 to 52 vote. One amendment provides that the board of trustees of each tax-supported hospital and institution shall have the power to determine those practitioners to be admitted. Another amendment defines a tax-supported hospital or institution as one deriving its support solely from public taxes. The bill is now on the informal calendar for third reading and final passage. Seventy-six votes will be required to pass it in the House.

Committee Substitute for House Bill No. 45 which passed the House and Senate was signed on March 13 by the Governor and will become effective January 1, 1944.

House Bill No. 300, the Doctor Prefix bill, is awaiting action by the Senate.

House Bill No. 299, the Basic Science bill, was killed in the House Committee on Public Health on March 20 by a vote of 11 to 6. This same bill which was introduced into the Senate some time ago as Senate Bill No. 98 is still in the Public Health Committee of the Senate.

Senate Bill No. 113 repeals Section 9832 of Article 6, Chapter 57 of the Revised Statutes of Missouri, 1939, relating to narcotic drugs and to enact in lieu thereof a new section dealing with the same subject. In this bill "Marijuana" includes certain definitely named plants. Otherwise this bill is the same as the present law.

House Bill No. 421 providing that all children under 15 years of age suffering from rheumatic heart disease which can be remedied by surgical or medical care shall be eligible for such care free of charge under the act relating to the children's hospital at the University of Missouri was passed by the House on April 14 and sent to the Senate.

Senate Bill No. 112, recently introduced, relates to the licensing of persons dealing with narcotic drugs and provides a license fee therefor of \$1.00 per annum for physicians engaging in such activities.

Senate Bill No. 103 has been introduced defining various associations of individuals and their contracts as either being against public policy or coming within the assessment plan and state supervision for doing group insurance business in Missouri intended to indemnify the assured for hospitalization, medication or surgical expenses. The purpose of this bill is to bring the present law up-to-date.

Senate Bill No. 79 relates to the regulation and inspection of foods and drugs by the State Board of Health.

House Bill No. 319, the Naturopathy bill, has been killed in the House Committee on Public Health, but a petition request is being made for reconsideration.

House Bill No. 590 has been introduced into the House by Representative Still to amend Section 10042 relating to osteopathy to read as follows: "The 'Practice of Osteopathy' is deemed to be the system, method, art or science of treating diseases, injuries or defects of the human body as taught and practiced by reputable colleges of osteopathy and surgery in this state, which practice shall include, without limiting the generality of the foregoing, operative surgery with instruments, obstetrics and the use of anesthetics, antiseptics, narcotics, biologics, antidotes, stimulants, serums and vaccines." The other section of this bill deals with the functions and duties of the Board of Osteopathic Examination and Registration. It is worthy of note that this board is not under the jurisdiction of the State Board of Health. This bill has been referred to the Public Health Committee of the House.

FEDERAL

Osteopaths as Commissioned Medical Officers in the Navy.—As reported in FLB—22, the Second Supplemental National Defense Appropriation Act of 1943, ap-

proved by the President October 26, 1942, contained a provision under which the appropriations for the Navy Department were made available "for the pay of commissioned medical officers who are graduates of reputable schools of osteopathy." On February 12, 1943, the Surgeon General of the Navy, Rear Admiral Ross T. McIntire, testified before a subcommittee of the House Committee on Appropriations in connection with a Navy Department Appropriation bill and was asked by Senator Sheppard of Texas if the Navy was exercising the authority to commission osteopaths in its Medical Corps. Admiral McIntire replied as follows:

"It is not at this time. I have been in constant communication with them, and we have inspected two of the schools, in fact, the only two schools that would allow us to inspect. The rest of them did not want to be inspected.

"One of the schools is really quite good. They lack in two regards, and in that we are telling them where their graduates will have to bring themselves up to a certain point. I have made some very definite suggestions to them as to how they can do these things, and they have turned me down on my proposition. I asked them to let us have some of their graduates to bring in so that we could try them out in internships to see what they can do. We have gotten nowhere. Where they fall down is in preventive medicine. That applies to the sending of doctors out into the field, into the Solomons, for instance. I always say a good doctor has a small sick list. No commanding officer wants many sick men on board. No man who is operating in the field wants a lot of sick men who are going to immobilize him. What I am trying to show these people is the fact that they must approach the whole plan from the preventive side, not wait until a man gets sick and then cure him. Now, that is the trouble with osteopaths, as I find them. We are putting our cards right on the table, because I realize they have spent a lot of time in their schools, and they are American citizens, and they have a right to consideration, but we are fighting a war, and we have got to have medical officers in the Naval Service, and, I think, the Army as well. When I send a man out on independent duty I have got to know that man can discharge all of his duties. I am not going to let anybody go out if I know that he lacks something professionally. He may not stick, and he may not do what I want done, but it will not be because he did not have the groundwork in the beginning.

"Now, when those people will come up and meet these things, then we are prepared to talk business with them."

Medical Care for Wives and Infants of Enlisted Men.—On March 18, the President approved a deficiency appropriation bill making available to the Children's Bureau \$1,200,000 for grants to States to provide medical, nursing and hospital maternity and infant care for wives and infants of enlisted men in the armed forces of the fourth, fifth, sixth and seventh grades. An estimate for this appropriation was initially submitted to the Congress last February by the President but the House of Representatives refused to include the estimate in an appropriation bill, H. R. 1975. When this bill reached the Senate, however, it was amended to include the estimate and thereafter the House agreed to the Senate amendment.

The authorized appropriation will enable a continuation of the program that was initiated last year until the end of the present fiscal year, June 30. A bill has been introduced in the House by Representative Keefe, Wisconsin, to authorize additional funds for this purpose so that the program may continue beyond the

present fiscal year. This bill, H. R. 2041, is pending in the House Committee on Labor. It authorizes for each fiscal year during the period of the present war and for six months following its termination a sum not in excess of \$6,000,000 for payments to States to provide medical, nursing, and hospital maternity and infant care for wives and infants of enlisted men in the armed forces of the United States of the fourth, fifth, sixth and seventh grades, under allotments by the Secretary of Labor and plans developed and administered by state health agencies and approved by the Chief of the Children's Bureau. A state plan, to be accepted, must provide (1) that the cost of administration in the State will be met from funds other than those authorized by the bill; (2) for administration of the plan or supervision of administration of the plan by the state health agency through its division of maternal and child health; (3) for such methods of administration as are necessary for the proper and efficient operation of the plan; (4) that maternity and infant care be authorized under the plan only as requested by or in behalf of wives and infants of enlisted men in the indicated grades, when similar care is not readily available from the medical or hospital facilities of the Army or Navy or from facilities provided by or through official state or local health agencies; (5) that the state health agency will submit such reports as may be required from time to time by the Chief of the Children's Bureau; and (6) for cooperation with medical, nursing and welfare groups and organizations.

Appointment of Female Physicians in the Medical Corps of the Army and Navy; Creation of Women's Army Corps.—The Sparkman bill, H. R. 1857, providing for the appointment of female physicians and surgeons in the Medical Corps of the Army and Navy has been reported to the House by the House Committee on Military Affairs with recommendation that it pass. The Committee suggested an amendment to the bill eliminating the restriction contained in the original bill that female physicians could be assigned to duty only in hospitals or other stations where female nurses were employed. The provisions of the bill will be effective, if it be enacted, during the present war and for six months thereafter.

A House resolution, H. Res. 146, submitted by Representative O'Connor, Montana, would create a committee of the House of Representatives composed of five members to be appointed by the Speaker of the House to (1) investigate the hospital problem throughout the United States to determine the number of hospital beds available for marines, soldiers, sailors, coast guardsmen, members of the merchant marine, and any and all persons engaged in warfare; (2) investigate the use of existing civilian hospital facilities; (3) study the hospital problem in the United States as a whole as affecting not only war industries but industries in general throughout the country; and (4) report in writing to the Congress the results of such investigations, together with recommendations. This resolution is pending in the House Committee on Rules.

Reorganization of United States Public Health Service; Osteopaths as Reserve Officers.—A bill to effect a reorganization of the United States Public Health Service, S. 400, has passed the Senate. The Senate Committee on Education and Labor, in reporting the bill, recommended that it be amended in several respects. One amendment authorizes the establishment in the Office of the Surgeon General of a Dental Division and a Sanitary Engineering Division, the chiefs of which are to be a commissioned dental officer and a commissioned sanitary engineer officer, respectively, of the regular corps detailed by the Surgeon General. Another amendment provides that "for the duration of the present war and for six months thereafter graduates

of reputable osteopathic colleges shall be eligible for appointment as reserve officers in the Public Health Service." The Senate, in passing the bill, accepted all amendments recommended by its Committee on Education and Labor. This Senate bill was referred in the House to the Committee on Interstate and Foreign Commerce.

Another bill, S. 910, introduced by Senator Downey, California, and pending in the Senate Committee on Finance, proposes to amend the Social Security Act so as to grant exclusive right to each State to adopt its own interpretation of the phrases "needy individuals who are blind," and "blind individuals who are needy." The purpose of the bill is to encourage the States to make more adequate provision for blind persons.

Study of Human Nutrition and the Nutritive Values of Food.—H. R. 2276, introduced, by request, by Representative Pace, Georgia, and pending in the House Committee on Agriculture. A bill to provide for the development of better diets and an improved nutritional status for the people of the United States.

Comment.—This bill would authorize, during the present emergency, an annual appropriation of \$1,000,000 for allotment to the States to pay the necessary expenses of conducting studies of the urgent problems of human nutrition and of the nutritive values of food and to provide the information needed to assure the best use of the food supply in the emergency, such studies to be conducted by the agricultural experiment stations established in the several States. Not to exceed 2 per cent of the sums appropriated will be used for administrative purposes. Ninety-eight per cent of the sum appropriated will be paid to the several States as follows: (1) the sum of \$10,000 will be paid to each State; and (2) the sum remaining will be paid to the several States in the proportion that the total population of each bears to the total population of the States as determined by the last preceding decennial census. In addition, an annual appropriation of \$500,000 will be authorized for use by the Secretary of Agriculture to make similar studies and to cooperate with the several experiment stations in such research.

PNEUMOCOCCIC MENINGITIS

The mortality rate in pneumococcic meningitis (inflammation of the three membranes enveloping the brain and spinal cord, caused by the pneumococcus) is not so high as some authors have suggested, Horace L. Hodes, M.D.; Margaret H. D. Smith, M.D., and Howard J. Ickes, M.D., Baltimore, declare in *The Journal of the American Medical Association* for April 24. The sulfonamides bring about an encouraging proportion of cures, except in patients under 2 years of age, they say. Before the introduction of sulfonamide treatment the mortality rate was nearly 99 per cent.

AVIDIN, BIOTIN AND CANCER

No effect was noted on the expected course of 2 patients with cancer who were fed for thirty weeks from sixteen to forty times the amounts of avidin (a protein in egg white) necessary to prevent the utilization of the limited amounts of biotin (a part of the vitamin B complex) in their diets, C. P. Rhoads, M.D., and Jules C. Abels, M.D., New York, report in *The Journal of the American Medical Association* for April 17. Recently several types of cancer have been reported to contain abnormally high concentrations of biotin, suggesting the possibility that if biotin should be withheld from patients with cancer, the growth of the latter might be decreased.

COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL

1943

(SOCIETIES WHICH HAVE PAID DUES FOR ALL MEMBERS AND DATE PLACED ON HONOR ROLL)

HONOR ROLL

Perry County Medical Society, November 24, 1942.
Benton County Medical Society, November 27, 1942.
Chariton County Medical Society, November 28, 1942.
Camden County Medical Society, December 3, 1942.
Miller County Medical Society, December 3, 1942.
Barton County Medical Society, December 4, 1942.
Scott County Medical Society, December 8, 1942.
Montgomery County Medical Society, December 9, 1942.
Moniteau County Medical Society, December 14, 1942.
Cass County Medical Society, December 17, 1942.
Ste. Genevieve County Medical Society, December 21, 1942.
Howard County Medical Society, December 24, 1942.
Webster County Medical Society, December 29, 1942.
Carter-Shannon County Medical Society, January 7, 1943.
Clinton County Medical Society, January 15, 1943.
Macon County Medical Society, January 28, 1943.
Dallas-Hickory-Polk County Medical Society, February 3, 1943.
Holt County Medical Society, February 24, 1943.
Pulaski County Medical Society, February 26, 1943.
Newton County Medical Society, March 5, 1943.
Morgan County Medical Society, March 10, 1943.

ASSOCIATE EDITORS: COUNCILORS OF THE TEN COUNCILOR DISTRICTS

FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR
Nodaway-Atchison-Gentry-Worth Counties
Medical Society

The Nodaway-Atchison-Gentry-Worth Counties Medical Society held a dinner meeting at the Linville Hotel,

Maryville, April 5, with the president, Dr. Pren J. Ross, Grant City, presiding. Members present were Drs. Eugene Crowson, Pickering; Charles W. Kirk, Hopkins; Charles T. Bell, Hiram Day, W. R. Jackson, Robert C. Person and William M. Wallis, Jr., Maryville; Benjamin F. Byland, Burlington Jct.; Charles D. Humbert, Barnard; Henry C. Bauman, Fairfax; Samuel E. Simpson, Stanberry, and Pren J. Ross, Grant City. Guests attending were Drs. Walter C. Myers, Savannah; J. B. Aldrich, A. S. Barnes, F. H. Clark and H. S. Frenkel, Clarinda, Iowa; Orval R. Withers, Kansas City, and Drs. Earl Braniger, Jesse Miller and D. J. Thomas, Maryville, dentists.

There was much discussion concerning Missouri state legislative matters of concern to the profession, with the feeling current that members as individuals could and should use all possible personal and professional influences to show up the true colors of the cultish propaganda which is now so rampant.

The scientific program for the evening was furnished by Dr. Orval R. Withers, Kansas City. Dr. Withers, introduced by Dr. Bauman of the Program Committee, gave a very fine extemporaneous lecture on "Allergy in General Practice," with special emphasis on the chronicity of all allergic disorders and the usual measures which look to alleviation and cure. His talk was illustrated with colored movies and lantern slides depicting instances of allergic reactions to various physical and environmental agents. Dr. Withers very kindly answered many questions which the experiences of members of his audience prompted them to ask.

The meeting adjourned on motion at 11:00 p. m., until October 4, 1943.

CHARLES D. HUMBERD, M.D., Secretary.

FIFTH COUNCILOR DISTRICT

W. A. BLOOM, FAYETTE, COUNCILOR

Cooper County Medical Society

The Cooper County Medical Society met March 18 at St. Joseph's Hospital, Boonville, at 8:30 p. m.

The following members were present: Drs. George W. Blankenship, G. W. Winn, T. C. Beckett, M. S. McGuire, R. L. Evans and J. C. Tincher, Boonville.

The following officers were elected: President, Dr. R. L. Evans, Boonville; vice president, Dr. G. W. Winn, Boonville; secretary, Dr. J. C. Tincher, Boonville; delegate, Dr. George W. Blankenship, Boonville; alternate delegate, Dr. T. C. Beckett, Boonville.

J. C. TINCHER, M.D., Secretary.

SIXTH COUNCILOR DISTRICT

R. W. KENNEDY, MARSHALL, COUNCILOR

Henry County Medical Society

The Henry County Medical Society held a dinner meeting at the Cozart Coffee Shoppe, Clinton, on March 23. The meeting was in honor of Dr. J. R. Hampton and Dr. S. W. Woltzen, Clinton, who had passed their fiftieth milestone in the practice of medicine, and Dr. J. W. Galbreath, Urich, who had passed his fifty-first. A gift of a Stetson hat was presented to each in honor of the occasion.

Those present besides the honorees were Drs. J. J. Russell, Deepwater; T. A. Blackmore and R. J. Jennings, Windsor; J. R. Baggerly, Montrose; G. S. Walker, E. C. Peelor and R. S. Hollingsworth, Clinton.

R. S. HOLLINGSWORTH, M.D., Secretary.

NINTH COUNCILOR DISTRICT

E. C. BOHRER, WEST PLAINS, COUNCILOR

Dent County Medical Society

The Dent County Medical Society convened at 8:45 p. m. at the office of Dr. W. G. Dillon, Salem, on April

6. The meeting was called to order with Dr. L. H. Hunt, Salem, president, presiding. The following members were present: Drs. W. G. Dillon, G. E. Joseph, L. H. Hunt, F. E. Butler, Salem. Dr. S. B. Beecher, Salem, State Board of Health Officer, attended the meeting.

The following officers were elected: President, Dr. W. G. Dillon, Salem; vice president, Dr. G. E. Joseph, Salem; secretary-treasurer, Dr. F. E. Butler, Salem; delegate, Dr. F. E. Butler, Salem; alternate delegate, Dr. G. E. Joseph, Salem.

A round table discussion of the Community Health League of Missouri was entered into by all present and it was decided that the Dent County Medical Society would sponsor the program 100 per cent.

Due to the higher cost of living, an increase of certain fees was discussed and the secretary was requested to draft a fee schedule which was agreed to unanimously by all present and later by Dr. L. L. Henson, Bunker.

Dr. Beecher explained some of the plans of the Old Age Nursing Home which were drafted by Miss Mary Laughlin, Salem.

F. E. BUTLER, M.D., Secretary.

BOOK REVIEWS

NASAL MEDICATION. A Practical Guide. By Noah D. Fabricant, M.D., M.S., Associate in Laryngology, Rhinology and Otology, University of Illinois, College of Medicine. Baltimore: The Williams & Wilkins Company. 1942. Price \$2.50.

This book is a comprehensive survey of the studies in nasal medication during the last two decades, expressing briefly the technic and conclusions of the various authors. Nasal function and physiology are well described, including Dr. Fabricant's own work on the biochemistry of nasal secretions.

Enough detail is given to make it an excellent handbook of nasal treatment. A very practical estimate of the value of treatments is made and unfavorable features indicated. Recognition of allergy is urged and conservative methods endorsed for nasal medication in children. A complete bibliography is appended to each chapter.

J. B. C.

A VENTURE IN PUBLIC HEALTH INTEGRATION. The 1941 Health Education Conference of the New York Academy of Medicine. New York: Morningside Heights, Columbia University Press. 1942. Price \$1.00.

This short volume of fifty pages describes the 1941 Health Education Conference sponsored by the New York Academy of Medicine. It reviews the basic objectives of the health education activities of the official and voluntary health organizations of Greater New York and the integrated utilization of the many different knowledges and skills that have made of this an established institution.

Preventive medicine is discussed under two general headings: (1) wholesale or impersonal, or public health preventive medicine, and (2) retail, personal or private preventive medicine.

Several attempts have been made to define "health," or perhaps to direct attention to the inadequacy of the present concept of health as "the absence of disease." The layman should be taught that health is not a static condition but a kinetic state, that none of us is "normal," that there is a difference between "adequate" and "optimal" as applied to health, that one must deal with a composite of many variable capacities and of variable ages and that health and physical fitness are individual problems and cannot be standardized.

The individual physician as a health educator is restricted by "self-consciousness about possible criticism

aimed at him for advertising." But public health education officers and groups must "make public health the property of the public without fear of criticism."

This project in health education to which the Academy of Medicine contributes its facilities is one which every local medical society could well consider as a major activity in these times when the public is becoming interested in nutrition, first aid and home nursing.

H. L. D.

THE ANSWER IS YOUR NERVES. By Arnold S. Jackson, M.D., F.A.C.S., With a chapter by the Rev. Edwin O. Kennedy. Illustrations by Evelyn Lepman. Madison, Wisconsin: Kilgore Printing Company. 1942. Price \$2.00.

As has been suggested by the author in his brief preface, quite evidently this book is intended for the general public rather than trained medical men. While there are some other treatises bearing on this same subject, yet I believe the author's book satisfies a want.

Especially do I commend the author for his sympathetic attitude toward various functional disorders. They have been neglected by many physicians and especially surgical specialists. Furthermore, needless surgical and medical treatments have been given to many patients suffering from various functional disorders. There are a few simple pen illustrations which may emphasize his theme to the layman. He also furnishes abstracted case histories to illustrate several of the neurologic states. The necessity for patients suffering from neural hypertension states to learn to relax is given serious consideration. Many suggestions to aid in accomplishing this are given.

If this book is handed to the patient as selected by the doctor it might be quite valuable as an aid to clear up mental quirks.

A. L. S.

THE PHARMACOLOGICAL BASIS OF THERAPEUTICS. A Textbook of Pharmacology, Toxicology and Therapeutics for Physicians and Medical Students. By Louis Goodman, M.A., M.D., Assistant Professor of Pharmacology and Toxicology, Yale University, School of Medicine and Alfred Gilman, Ph.D., Assistant Professor of Pharmacology and Toxicology, Yale University, School of Medicine. New York: The Macmillan Company. Price \$12.50.

This newest book on pharmacology and therapeutics is a most valuable addition to studies in that field. It contains quite complete information and extensive bibliographies on many widely used drugs such as the sulfa drugs, including sulfathiazole, too new to have been described in any previous book. The information on the older and longer established drugs is classified, simplified and brought up-to-date so that in a short time one may study the basic physiologic principles relating to each group of drugs, their pharmacologic action, toxicology and uses. Drugs are classified primarily according to their pharmacologic action as: autonomic blocking agents, drugs affecting urine formation and central nervous system stimulants. Chapters on chemotherapy of malaria, amebiasis and syphilis, with discussion of the pharmacology of the drugs so used, are quite complete and up to date. Four comparatively long chapters on all aspects of sulfanilamides and related sulfonamide drugs are included, getting material on these drugs together for the first time in a general reference book. A long section on central nervous system depressants includes discussion of anesthesia and of all the anesthetic drugs, treated at much greater length than usual in a book not concerned primarily with anesthesia. Drugs of endocrine origin and vitamins are other long chapters in which rapidly changing knowledge is brought up-to-date as far as possible in a book of this magnitude.

E. H. G.

OVARIAN TUMORS. By Samuel H. Geist, M.D., Attending Gynecologist, Mount Sinai Hospital; Clinical Professor of Gynecology, College of Physicians and Surgeons, Columbia University. With 312 Illustrations. New York: Paul B. Hoeber, Inc. 1943. Price \$10.50.

This very complete and up-to-date book is a complete survey and study of ovarian tumors. In the best general textbooks this subject is usually disposed of in some forty pages; here one has over 300 pages divided into fifteen well arranged chapters. The first hundred pages, devoted to the embryology, anatomy and physiology of the ovary are most important and should be studied carefully by clinician and pathologist alike if one wished to understand the necessity for the apparently complicated classification of these growths, both malignant and benign. If one is appalled by such terms as arrhenoblastoma, remember that terminology changes and he is only dealing with the old testicular adenoma that Pick described in 1905.

An important point brought out by the author, which should keep the clinician from blaming the poor pathologist for everything (especially in some of the granulosa type of tumors) is the difficulty of distinguishing between benign and malignant growths. In tumors that appear benign clinically the entire tumor should be studied as malignant areas may be found. Also it is stated that some of the tumors found to be malignant histologically are benign clinically.

This book is important to the clinician as well as the pathologist as it is based on the study of 1,100 cases from clinical as well as pathologic aspects, and there are chapters on diagnosis and treatment. The book is especially well printed and illustrated for which full credit should be given the publishers. It is a "must" for anyone who has to do with the most complicated structure in the human body—the ovary.

R. L. T.

FRACTURES. By Paul B. Magnuson M.D., F.A.C.S., Associate Professor of Surgery Northwestern University Medical School, Attending Surgeon, Passavant Memorial Hospital and Wesley Memorial Hospital, Chicago. 317 Illustrations, Fourth Edition Revised. Philadelphia: J. B. Lippincott Company. 1942. Price \$5.50.

This book was written to meet the needs of the man who first sees the fracture. An effort has been made to simplify the methods of treatment and to approach the problem of fractures from the standpoint of anatomy and physiology. The book is not a treatise on the operative treatment of fractures and operative methods are touched upon merely to give information and guidance for possible future treatment. The author, however, emphasizes the importance of having a thorough knowledge in bone surgery before undertaking the operative treatment of fractures. "A bad result in open reduction of a fracture is under any circumstances to be regretted, but when it occurs as a result of too much daring at the patient's expense, it is to be condemned."

"All the methods described in this book have been thoroughly tried in practice. There are many more which are as good, there may be some that are better, but these have worked!"

The fourth edition was prepared while this country is engaged in war. "The additions that have been made, therefore, have to do for the most part with first aid, transportation and early treatment of compound fractures."

The chapters on "Fundamentals," "Pathology and Repair of Fractures," "Anatomical Mechanism and Physical Equipment in the Reduction of Fractures" and "Equipment" are complete and contain much valuable information.

The following chapters dealing with the individual types of fractures are complete in detail, with many

excellent illustrations, and simple in arrangement. The methods are sound, and the technic is not complicated and does not require unusual methods or appliances difficult to obtain.

Magnuson's "Fractures" would be a valuable book for any physician who may have to treat fractures.

A. O.

SHOCK Its Dynamics, Occurrence and Management. By Virgil H. Moon, A.B., M.Sc., M.D., Professor of Pathology, Jefferson Medical College, Philadelphia. Illustrated with thirty-six Engravings. Philadelphia: Lea & Febiger. 1942. Price \$4.50.

This is an unusual and timely treatise on a subject which has long been the source of considerable confusion to the medical profession. This book is clearly and concisely written by an author who has been a pioneer in the pathologic physiology of shock, both from a practical viewpoint as well as from an experimental angle.

This book may be divided roughly into two parts. Each is more or less complete in its own division, the first part dealing with the vascular dynamics of shock in which the author reviews all the various physiologic features of shock including etiology, pathology and clinical aspects. The second part is devoted to the prevention of shock including also the recognition as well as the management. In the latter part of the book there is a complete recapitulation of the entire subject and there is an excellent chapter on the rationale of the treatment of shock.

This book should be owned by every practicing physician of today and will be of untold benefit for those to use in the military field.

A. E. U.

CLINICAL DIAGNOSIS BY LABORATORY METHODS. By James Campbell Todd, Ph.B., M.D., Late Professor of Clinical Pathology, University of Colorado School of Medicine; and Arthur Hawley Sanford, A.M., M.D., Professor of Clinical Pathology, University of Minnesota (The Mayo Foundation), Head of Division on Clinical Laboratories, Mayo Clinic. Tenth Edition, Thoroughly Revised. 911 pages with 380 illustrations, 32 in colors. Philadelphia: W. B. Saunders Company. 1943. Price \$6.00.

Todd and Sanford has always been a good laboratory book. Now in its tenth edition it is still a good book. Most laboratory workers are familiar with the previous editions; this edition takes the book into its thirty-fifth year of publication.

The tenth edition includes a number of new procedures which have been described since the previous edition was published. Some of these are: methods of testing for sulfonamides in blood and urine, fluorescent method of staining tubercle bacilli, the method of Quick for determining prothrombin time of blood plasma, inclusion bodies, a brief description of diseases due to fungi, brief discussions of photometric methods of blood chemical analysis, the Mazzini serodiagnostic test for syphilis and other methods.

The book contains a wealth of excellent black and white illustrations and a few new color plates.

A very brief discussion of interpretations of laboratory findings is included in each section, with a summary, in the Index-Outline, of laboratory findings in "important" diseases. In some instances the interpretations would have been of more value had they not been quite so brief.

I am constrained to disagree with the statement on page 336 of this book "While subgroups are interesting and may be used very rarely in medicolegal cases, there is probably not as much importance to be attached to the determining of subgroups as formerly was thought. . . ." My own experience has been that, while apparently there is not much danger in transfusing A₁

patients with A₂ blood, to reverse this and transfuse A₂ patients with A₁ blood is always attended by the possibility of transfusion reactions. This is particularly true when dealing with an A₂B patient transfused with A₁B blood.

There are 157 pages devoted to the blood, including blood groups, 53 pages devoted to bacteriologic methods (this book is not intended to be a textbook of bacteriology), 104 pages on serodiagnostic methods, 97 pages on clinical chemistry, just to mention some of the chapters.

R. B. H. G.

FRACTURES OF THE JAWS AND OTHER FACIAL BONES. By Glenn Major, B.S., A.M. (in Pathology), M.S. (in Experimental Surgery), Ph.D. (in Surgery), D.D.S., M.D., F.A.C.S., Pittsburgh. With Chapters on Radiographic Technic by Lester M. J. Freedman, B.S., M.D., Formerly Assistant Radiologist, Department of Diagnostic Roentgenology; Now Acting Director, Department of Radiation Therapy, The Western Pennsylvania Hospital, Pittsburgh; and War Aspects of Jaw Fractures, by Arthur Dick, D.D.S., M.D., Major, Medical Corps, Army of the United States. With 225 illustrations. St. Louis: The C. V. Mosby Company. 1943. Price \$7.50.

This is an excellent book on the fractures of facial bones. It is an admirable presentation of the subject and is published in a not too large volume. Although the book is written by three different authors, the theme is essentially the same.

The book begins with a general discussion of fractures followed by a chapter on diagnosis of fractures of the facial bones, then general considerations including displacement of the fragments, anesthesia, types of fixation, special fractures of the mandible, postoperative treatment, complications, dietetic management, radiographic technic and the very important and timely war aspects of jaw fractures. The 225 illustrations are excellent and of exceptional value as reference aids.

Of special interest are the chapters describing the various types of mandible fractures and fixation. The authors have stressed the basic principles in the treatment of fractures and, while all the types of fixation depicted by various authors are not mentioned, the principal ones are described.

The book is well compiled and the general practitioner of medicine or dentistry or the oral surgeon will find it a useful reference work.

E. L. W.

SYNOPSIS OF PATHOLOGY. By W. A. D. Anderson, M.A., M.D., Assistant Professor of Pathology, St. Louis University School of Medicine; Pathologist, St. Mary's Group of Hospitals. With 294 Text Illustrations and seventeen Color Plates. St. Louis: The C. V. Mosby Company. 1942.

It has been said that a person who has detailed information on a subject can state his information in a few words, and if that is so, Dr. Anderson must have detailed information on a very large number of subjects. His book, "Synopsis of Pathology" is meant to bridge the gap between the mere outlines of pathology which arranges the science but which give no actual information, and the more wordy textbooks of pathology which elaborate on subjects to the extent of giving the pros and cons and possibilities. It is an ideal book for review of the student and for quick detailed information to the busy practitioner. The pictures are extensive, very clear and highly pertinent. His book includes remarks about newer and rarer conditions that cannot be found in any other known textbook on pathology such as the paragraph on "Toxoplasmosis" and "Histoplasmosis." He has rather ingeniously stayed away from controversial statements and at the same time covered the pertinent facts of the science of pathology as it is known today.

H. N. A.

THE JOURNAL

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ADDRESS OF THE PRESIDENT

H. L. KERR, M.D.

CRANE, MO.

It is impossible to suppress an emotional regret that this is my valedictory. Although my bones are a little older, my spirit is still inquisitive. More than forty years of medical practice during a period of almost incredible scientific revelation stimulate a longing to see the unpredictables of the next half century. As the curtain is partly lifted on scenes of new therapy, of new developments in immunology, of new and daring surgery, of new social science, of new adventures into the mysteries of human behavior, of inevitable readjustment in world geography, one can neither fold one's hands and close one's eyes in complacent retrospection nor suppress anxiety over the immediate social future.

The Missouri State Medical Association has attained the dignity of age as it has grown from a small group of founders in 1857 to its present stature of 3,283 members.

The triumphs of optimism, the evolution of science, the insistence of the highest possible qualifications of the doctor of medicine, the romance of the physician as he progressed from empiricism to scientific controls and from the saddle bag to the automobile stimulate dreams of wonder as to whether the century ahead can be as remarkable as the century just past.

One must credit the founders of organized medicine with being just as up-to-date as the profession is in 1943 as one views with amazement new discoveries which may completely change the conception of medical practice.

Postgraduate education has as great importance to the physician of today as it had for his predecessor of 1846. Unless the physician of 1943 is alive to the unfolding medical and surgical drama, he will find himself so far behind the procession that

he will be unable to keep step with the public which is trying to understand the sensational revelations which are broadcast in the daily press.

Now today, beset as the medical profession is from every side by the socially minded, the cultist, and the politician, it is small wonder that many, after pondering the trends, fear for the future of American medicine. The great majority of physicians in the United States, because of the type of lives they live and steeped as they are in the practice of medicine, have scant time and, unfortunately, little inclination to interest themselves actively in these trends even though they recognize the personal threat. It seems to me that until the rank and file of American physicians are stung into action, the wholehearted and personalized cooperation so sorely needed will not be forthcoming.

Such an aroused spirit may be expected if to diplomatic service is added militant leadership. This militant leadership should come, perhaps, from the parent body, the American Medical Association; but please do not forget that the Missouri State Medical Association is an important part of the American Medical Association, and that the county society is an integral part of the State Association. The needed leadership might be found right here in Missouri or in any one of her 114 counties or in the City of St. Louis.

The medical profession of Missouri who today (in spite of the fact that more than one thousand of its number are with the fighting forces of the country) is carrying forward the best traditions of centuries of medical progress, simply does not feel bound to kneel before the fancies of social reformers whose only idea of progress is the steady growth of bureaucracy. For example, they are opposed to compulsory health insurance which is only a polite word for socialism. Socialized medicine means state medicine, which means politically controlled medicine and that means bad medicine, bad for the medical profession, bad for medical education, bad for the individual practitioner of medicine, and very bad for all of the three and a quarter million citizens of Missouri.

Read at the Annual Banquet in Honor of Past Presidents at the 86th Annual Session of the Missouri State Medical Association, St. Louis, April 18, 1943.

ADDRESS OF THE PRESIDENT-ELECT

A. W. McALESTER, JR., M.D.

KANSAS CITY, MO.

This assemblage is gathered here tonight primarily for the purpose of paying tribute to those who in the past have been our leaders and who have set the example that we may follow.

I want to express to them our esteem, our affection, admiration and gratitude. The outstanding essence of their lives has been a devoted untiring, and generous service to mankind as well as loyalty to their fellows and to our country, both in peace and in war. Our blessings be upon them and may we be able in our modest way to emulate their noble qualities of character and service.

I am sure that the American people and the armed forces recognize the incomparable service the physicians have rendered and are rendering the country gladly and wholeheartedly without compulsion or reservation.

Let the medical profession beware, in the haste and the aftermath of this war and the hard years that are sure to come, that it be not led astray but remains faithful to the practices of the noblest profession the world so far has seen and carry high the unextinguishable torch its predecessors have placed in its keeping. It is well that we understand both German and Japanese, as well as English, and the psychology and motives that make men as well as destroy them.

Economics is a big subject. It is afflicted by many theories as well as by many theorists and is hemmed about with many corollaries. We are being bombarded by these theorists, uplifters on salaries, the challengers of America, the distorters of the preamble of our Constitution, and the scoffers at the fathers of our country. Many are foreign importations and some of their schemes would consume twenty-five per cent of our national income. At this critical time, when we have only one national and united purpose, our country is in no mood to digest the volume of matter so thrown.

In this state some of our county societies for years have given thought and watched the barometer rise and fall. Several excellent committees have made studies, one especially in my own county society. May you give careful reading and thought to what our own associates place before you. In fact, make it your business. And do something that seldom a doctor does; answer, "How is it going to affect me and my boy, who is a premedical student as well as the welfare of your patients and friends you have served so faithfully?" Perhaps you will arrive at one conclusion as I have: that if there are changes in the practices of medicine, my fellows are going to make them and we do not have to hire someone to make them for us and we do not intend to be swayed by mountebanks and crackpots and so-called uplifters.

Read at the Annual Banquet in Honor of Past Presidents at the 86th Annual Session of the Missouri State Medical Association, St. Louis, April 18, 1943.

And further, we do not want someone running around on the fringes of the practice of medicine representing, or purporting to represent, the considered opinion of our profession.

It is unthinkable that the people of this nation will allow enterprise, will allow the practice of law, will allow the judges of our courts, will allow the practice of medicine, to be subverted. If they only know they would not allow themselves to become the counterpart of the Roman heredity drawers of wheat.

Super-stateism is to be reckoned with. It has wrecked peoples and destroyed their civilization. It is a product of ego. Medicine has been free to develop and it must remain free of restraint to continue its unselfish way into the sun. If it is saddled with a super-government, and governed by bureaucratic edicts, all is lost and the next hundred years will not witness a like advance which the profession has made in the last ten years.

"Knowledge is power; knowledge is safety; knowledge is happiness." There is no patent on knowledge. It is obtained by hard work, by burning the midnight oil, by right thinking, and right purpose and not by wishful thinking. Legislation and edicts cannot create a doctor. When one thinks a politician is to be a nursemaid for our population from the cradle to the grave, that person forgets that thy daily bread is won by the sweat of thy brow.

Free enterprise has made this nation great. Its sinews have been the Thomas Edisons, the engineers, the chemists, and the great and fertile minds; and so with medicine—it has been the Bantings, the biologists, the chemists, the great teachers, and the academic freedom of our universities. It has been by hard work, it was not accomplished on a forty-hour week; it was not accomplished without labor, and it was not accomplished without privation; and to its glory, it was not accomplished by greed.

I am only a newcomer to this chair and soon will take my place out there with you. And I pledge you now that the precepts of our Fathers will not lightly be snatched from my hands—either now or then. By united and concerted effort these precepts will maintain. Eternal vigilance is the price of our own and our people's freedom.

2203 Bryant Building.

"By all odds the 'push through' method is the best one for the removal of a fish hook in which the barb has gone in beneath the skin," it is advised in *The Journal of the American Medical Association* for May 22. "Circumstances can conceivably arise in which it would require pushing the fish hook through a considerable distance by a curved route before the barb emerges from the skin. When this occurs, it would seem better to make a small incision down to the barb before pulling it out backward."

The foregoing is in answer to a question from a physician regarding a statement published in a fishing magazine wherein it was advised that one "take a pair of small nosed pliers, take a good hold on the hook yourself or have some one officiate for you, and yank. . . ."

THE TREATMENT OF TUMORS BY ESCHAROTICS

LAUREN V. ACKERMAN, M.D.

AND

THEODORE P. EBERHARD, M.D.

COLUMBIA, MO.

The treatment of cancer by escharotics is as old as the practice of medicine itself. Evidence of the use of these chemicals is found in the Egyptian papyri, in American Indian medicine and in the "old wines" medicine of many countries. Like many other therapeutics, unscientific and uncontrolled use of escharotics is dangerous and the development in other fields of more refined methods in the treatment of tumors has diminished the elements of value in it. Recently, however, Mohs¹ has revived interest in the use of an escharotic, zinc chloride, and has developed it to a high degree of perfection. It is because of this renewed interest that it is believed necessary to call attention to certain of its dangers and disadvantages. Mohs¹ emphasizes that the method is utterly unsuited for use in the private office and small hospital. It should not be used by anyone unless he can maintain a staff of trained and competent assistants and have adequate control facilities.

Any substance which will penetrate keratin and devitalize protein can be used for "chemosurgery." However, nitric, sulphuric and di-trichloroacetic acids, potassium hydroxide (caustic potash), antimony chloride, arsenic trioxide and zinc chloride are used most commonly. None of these substances, contrary to the opinion of cancer quacks, has any tissue specificity. The gross and microscopic pictures in the early stages depend upon the chemical used. Zinc chloride, used properly, possesses the advantage of "fixing" tissue in the same manner as formalin, leaving it suitable for histologic sectioning and staining.

The course of paste-treated lesions when uncontrolled by pathologic study is remarkably uniform. The initial tumor may be small. After zinc chloride is applied locally, a large area of slough appears, but the lesion eventually heals over. The wide area of destruction with secondary fibrosis caused by the paste often results in marked disfigurement. An eye, nose or an ear may be completely destroyed by paste applied to a relatively small and even remote lesion. After apparent healing, there may be cure, but if the lesion has any depth, recurrence is the rule. This quiescent period may vary from a few weeks to several years before the deep-lying tumor in the matrix of the scar tissue again begins to grow and ulcerate. Microscopically, paste lesions show fairly uniform pathologic alterations. Ulceration of the overlying epithelium, marked acute and chronic inflammation and extensive fibrosis are present. In the deeper tissues and usually at the periphery of the ulcer-

ation, actively growing tumor may be seen. Skin appendages still may be present.

From the standpoint of further therapy, these changes are of great importance. The dense, sclerotic, avascular tissue is almost as subject to radiation necrosis as previously radiated tissue. Even after surgery, unless it is possible to excise well around the scarred area, the wounds heal as inadequately as after intensive radiation. The true limits of reduced vascularity and lowered vitality are difficult to determine and may extend far beyond microscopically damaged tissue. The still viable cancer cells have increased radioresistance, although not to such a degree as those previously radiated. This change may be related to differences in the degree of vascularity.

Experience at the Ellis Fischel State Cancer Hospital furnishes ample evidence of the necessity for observing Mohs¹ technic. Prior to his developments, there was no way of controlling the depth of action of escharotics. Case reports of this hospital show that extensive disfigurement and disabling scarring can result from paste treatment, while viable cancer still may be present. The primary healing of a lesion cannot be taken as evidence of cure for in no other type of treatment is local recurrence likely to be so long delayed. The method appears to be simple, avoiding the imagined risk and discomfort of radiation and surgery. This has resulted in its indiscriminate use by charlatans, well-intentioned but misguided laymen and practitioners to whom better methods are not readily available. Many patients previously treated by escharotics have been seen and in not one has it been possible to verify the original diagnosis of cancer except when recurrence was present. From the histories and descriptions of the original lesions, as given by the patients, the impression has been gained that not over 50 per cent had cancer. Again, this fact precludes any attempt to judge the efficacy of escharotic treatment when used without Mohs¹ controls or to judge the type of lesions upon which the method may be expected to produce a cure.

Thirty-nine cases previously treated by paste have been collected on which we would like to report. Twenty of these had been treated by a miscellaneous unorganized group of charlatans. The remaining nineteen had received treatment at Dr. Nichols' Sanatorium, Savannah, Missouri, where zinc chloride is used exclusively. This sanatorium was described and condemned by the American Medical Association in 1933.² The operators of the institution assert that roentgen ray, radium and surgery are not to be recommended and that biopsy is a dangerous procedure and should not be done.³

The lesions of thirty-nine cases treated by paste were distributed as follows: twenty-three were located on the skin of the face and the lip, two on the skin of the hand, one from the vulva, one from the cervix and twelve from the breast. Of the twenty-five skin and lip cases, twenty-four had clinically persistent tumor verified by pathologic examination. Eleven were epidermoid and thirteen

From the Pathological and Radiological Departments of the Ellis Fischel State Cancer Hospital, Columbia, Missouri.

were basal cell carcinomas. The twenty-fifth, with a negative biopsy, had marked deformity caused by the paste and multiple operations for plastic repair were necessary. Radiation therapy was given to eighteen cases with a good response in all but three. In these three cases, it was necessary secondarily to excise surgically the lesions. Six of these twenty-five cases were treated by surgical excision alone. Pathologic examination by multiple section showed the excisions to be adequate in all but one case. Deformity was quite marked before surgery and further deformity resulted from the excision. Plastic repair in the future may be necessary in some of these cases. Twenty-four cases of skin cancer, treated by radiation or radiation plus surgery or surgery alone, have been apparently free from tumor anywhere from six to twenty-four months (fifteen months average), a period obviously too short from which to draw any conclusions.

In the two patients having carcinoma of the cervix and vulva respectively, the disease was too far advanced to give any but palliative roentgen ray therapy. Both are now dead.

There were twelve patients with breast tumors, ten of whom when first seen had evidence of local recurrence and distant metastases. Eight of these ten are already dead. It is interesting that the average duration of life from the first symptom to death in seven of the eight patients who died was thirty-three months. The eighth lived ninety-eight months. According to Ewing,⁴ the average duration of the untreated disease is twenty-seven months. The histories described small initial lesions and it is likely that if accepted methods of treatment had been used they might be cured today. The destruction caused by the paste resulted in a wide area of ulceration and, in some cases, several pounds of breast parenchyma were destroyed. Paste applied to the axilla also resulted in ulceration and scarring. It took up to ten months for this

ulceration to heal, after which, as in the skin cases, there was a period of apparent freedom from disease. In all ten, carcinoma recurred locally and metastases to the supraclavicular and axillary lymph nodes, pleura, lung, liver, vertebrae and other structures invariably were present. Two cases showed no evidence of tumor but revealed a complete absence of the breast with marked surrounding disfigurement. The clinical histories in these two cases suggested that the original lesion was benign rather than malignant. In no case has it been possible to obtain pathologic confirmation of the original diagnosis.

REPORT OF CASES

Case 1. J. S., aged 73, white male, was admitted to the Ellis Fischel State Cancer Hospital on December 27, 1940. In 1937, the patient had been treated at Savannah for a carcinoma of the oral commissure. In the fall of 1940, a recurrent nodule appeared. Physical examination showed a marked deformity of the lip with extension of carcinoma to the buccal mucosa. The patient could not open his mouth more than 2 cm.

Pathologic examination showed a well differentiated epidermoid carcinoma.

The patient was treated by roentgen ray and radium and the lesion has been under control for fifteen months.

Comment: This patient was reported by Savannah as cured⁵ but pathologic examination demonstrated recurrent carcinoma.

Case 2. G. B., aged 74, white male, was admitted to this hospital November 26, 1941. Fourteen years before, the



Fig. 1. Marked deformity with recurrent tumor.

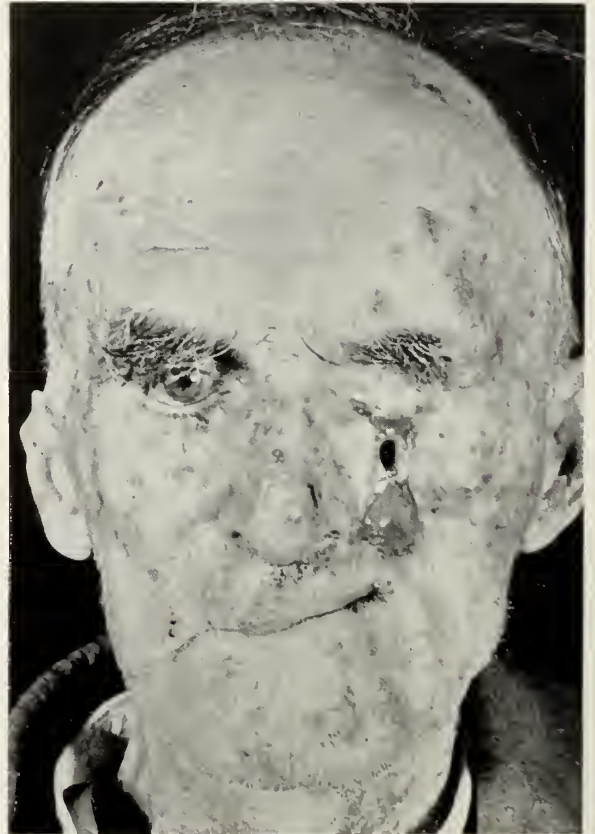


Fig. 2.

patient had treated himself with a cancer paste for a lesion at the nasal margin of the left lower lid. One year later, a recurrence was treated at Savannah. In 1935, the patient developed lesions on the tip of the right ear, the tip of the nose and on the right cheek. He was again treated at Savannah, which resulted in deformity and sloughing of the lesions. The lesion of the naso-orbital area recurred in 1938 and at that time there was a tumor behind the ear. He was again treated with paste at Savannah, which cost him his left eye and resulted in a sinus breaking into the left maxilla. (See Fig. 2). Physical examination showed a markedly deformed, scarred area on the face. There was definite tumor beneath the angle of the right mandible.

Pathologic examination showed an undifferentiated epidermoid carcinoma.

It was thought that the recurrent tumor might be treated by wide surgical removal because radiation in an area so altered by paste does very poorly, but the patient refused treatment.

Comment: This case illustrates how apparently small lesions which might have been treated and cured initially by accepted therapy, under paste, spread, recur, deform and ultimately cause the death of the patient.

Case 3. E. L., aged 48, white female, was admitted to this hospital on March 25, 1942. In July 1940, this patient had noted a small movable lump in the left breast. She consulted two physicians both of whom told her that it was probably a benign lesion and advised exploration, frozen section and treatment depending on the pathologic condition. She refused and in February 1941 went to Savannah for paste treatment. The entire right breast was removed but did not completely heal until January 1942, a period of about eleven months. Physical examination revealed a fairly well developed, well nourished female whose right breast was replaced entirely by scar tissue. (See Fig. 3). Paste had been applied to the axilla, which resulted in fibrosis, scarring and subsequent limitation of the movement of the arm. Skeletal series failed to reveal any evidence of tumor and biopsy of the lesion showed no evidence of malignancy.

Comment: From the history, it seems highly probable that this patient never had a malignant tumor of the breast. There is no justification for removal of an entire breast on a clinical impression.



Fig. 3. Marked scarring is present.

Case 4. E. M., aged 49, white female, was admitted to this hospital on October 8, 1941. In 1937, she noted a lump in the right breast, and three months later went to Savannah, where the right breast was removed by paste. She was assured by them of complete cure. The ulceration caused by the paste healed, but in March 1941 she noted lumps in the region of the previously treated area, in the axilla and in the right supraclavicular fossa. She returned to Savannah at that time and was told that they would treat her but would be unable to cure her. She refused treatment and applied for admission to this hospital on the advice of her physician. There were hard, metastatic lymph nodes felt in the right axilla and the right supraclavicular region. There was firm, nodular tumor tissue in the region of the right breast.

Pathologic examination of a biopsy from the region of the right breast showed large masses of tumor cells growing in dense connective tissue.

Comment: This patient was reported as cured by Savannah.⁵ The presence of supraclavicular metastases, together with fixation of the recurrent tumor to the chest wall, made surgery impracticable and she was given palliative roentgen ray therapy. It is probable that this lesion, when first discovered, was operable and therefore curable. This is further substantiated by the rather slow clinical course of the lesion.

DISCUSSION

It will be granted readily that the use of any method of treatment of cancer by incompetent practitioners is to be condemned. Likewise, the use of any method without the application of its necessary controls and safeguards will be censured generally. Does "chemosurgery," as Mohs¹ calls it, have any place in the treatment of tumors? We believe that it has a very limited but very definite field of usefulness. We also feel from our observations that zinc chloride should not be used without the painstaking technic and elaborate laboratory controls of Mohs.¹ Except in a few instances, it accomplishes nothing that cannot be equally well or better done by radiation or surgery. It is still a method of local attack, which offers a chance of eradicating cancer with a minimum sacrifice of normal tissue. At times, this may be of extreme importance, such as in the region of the ethmoid sinuses where wide block dissections, the only type known to offer reasonable hope of arrest, often cannot be done. Radiation of cancer in the bones of this or any other region is fruitless. In such cases, paste might be used, without the fear of trauma, hemorrhage or mechanical spread and might enable one to follow the tumor to its termination a tenth of a millimeter at a time. Zinc chloride treatment



Fig. 4. Three carcinomas of the breast showing local recurrence after treatment with paste.

offers a small percentage of such patients a chance which they would not otherwise have. The same is true of lesions in the region of the facial nerve, ear, mastoid and great cervical vessels. We do not believe it has a practical place in the treatment of superficial lesions otherwise readily controlled by radiation or surgery, nor in that of deep-seated visceral tumors. It should never be used in the treatment of breast tumors.

SUMMARY

A study of thirty-nine cases previously treated by escharotics is presented.

Illustrative case histories with photographs show the damage caused by injudicious use of escharotics.

The treatment of cancer by escharotics, as generally practiced today, is an unsatisfactory, ineffective and dangerous method. Its use without the safeguards developed by Mohs¹ is condemned strongly.

Ellis Fischel State Cancer Hospital.

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ROCKY MOUNTAIN SPOTTED FEVER IN THE MIDWEST

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During the last five years there has been a definite and progressive increase in the number of reported cases of Rocky Mountain spotted fever in the State of Missouri (table 1). The disease was once so closely associated with the region of the Rocky Mountains that the locality was considered an important point in differential diagnosis. However, between January 1, 1925, and January 1, 1943, the disease has been reported to the United States Public Health Service from every one of the states except Wisconsin, Michigan, Vermont, and Maine.

Whether the disease is spreading from the site of discovery, or whether it has long been prevalent in other parts of the country, has not been proved. However, the increasing number of reported cases has focused attention on this rickettsial infection, and its importance in the differential diagnosis of febrile exanthematous diseases should be emphasized.

Three established cases of spotted fever have been seen at the Barnes Hospital during the last

two years. Two of these patients died and the diagnosis was confirmed by the autopsy; the third patient recovered.

CASE REPORTS

Case 1. C. T. S., a white housewife, aged 57 years, entered Barnes Hospital on June 3, 1941, complaining of severe headache, pain in the back, and chills and fever, all of five days' duration.

The patient had always enjoyed good health except for a moderate hypertension of many years' duration. She had frequent headaches, but never had any symptoms of cardiac decompensation.

The present illness began on May 30, 1941, when she developed a headache and aching pain in the lumbar region. A severe shaking chill of four hours' duration occurred that afternoon; this was followed by a subjective sensation of fever. Chills alternating with fever continued until her admission to the hospital five days later. The day before admission she had two loose stools and complained of slight nausea.

The patient lived in St. Louis County and had not been out of the neighborhood recently. She had been bitten many times by mosquitoes in the weeks prior to the onset of her illness but was not aware of having been bitten by a tick. Her hunting dog, which she occasionally petted, was often permitted to roam in the nearby woods.

Physical Examination.—The patient's temperature was 40.2 C, pulse rate 88 per minute and respiratory rate 22 per minute. The patient appeared acutely ill. Breathing was shallow and rapid with an expiratory grunt. The eyelids and face were edematous and there was a dusky tint to the skin. No rash was present. The blood pressure was 170/100. The heart was slightly enlarged, rhythm was regular and there was a systolic murmur at the apex. The lungs were clear. The abdomen was soft and slightly distended but there was no tenderness. The tendon reflexes were normal.

Laboratory Data.—The urine was negative except for the presence of 1 plus albumin on one occasion. The red blood cell count was 3,230,000, hemoglobin 11.5 gm., white blood cell count 12,600, and the Schilling differential showed a moderate increase in immature polymorphonuclear cells. Urine and blood cultures showed no growth and the stools yielded no pathogenic organisms. The blood serum did not cause agglutination of *Eberthella typhi*. The nonprotein nitrogen content of the blood was 23 mg. per cent. Blood serum drawn on June 5 (the seventh day of the illness) caused 4 plus agglutination of *Bacillus proteus* OX 19 in dilutions of 1 to 20 and 1 to 40, and 3 plus agglutination in 1 to 80 dilution. Guinea pigs were inoculated intraperitoneally with citrated whole blood drawn from the patient on the eighth day of illness. These animals developed no fever nor other evidence of infection.

Course in the Hospital.—The patient became progressively more prostrated. Temperature ranged between 39.8 and 41.0 C. The evening of admission she became irrational. The following day she refused food and from then on had to be fed a liquid diet by nasal tube. On the second hospital day a rash appeared; this consisted of irregular macules varying from a millimeter to a centimeter in diameter, distributed over the right side of the abdomen, the right axilla and the arms. The lesions were not purpuric or hemorrhagic; they did not fade on pressure. On the same day rales were heard at both lung bases posteriorly and respirations rose to forty-two. The patient was placed in an oxygen tent. The following day the rash became confluent and many hemorrhagic areas appeared. The lungs were now clear except for a few crackles at the extreme left base. Sulfathiazole therapy (1 gram every four hours) was begun and the patient was transfused with 500 cc. of citrated whole blood. On the fourth hospital day her blood pressure fell progressively and temperature rose to 41.0 C. She expired that night.

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The authors wish to express thanks to Dr. Henry Pinkerton of St. Louis University for biologic studies in case 2 and for reviewing the anatomic material.

Table 1. Cases of Rocky Mountain Spotted Fever
Reported from Missouri and Surrounding States to the United States Public Health Service

	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942
Missouri.....	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7	8	13	11
Illinois.....	0	0	0	0	0	0	0	0	0	1	2	6	6	24	19	18	17	25
Kentucky.....	0	0	0	0	0	0	0	0	0	2	0	3	1	1	7	6	9	9
Tennessee.....	0	0	0	0	0	1	4	1	2	3	1	4	11	8	23	13	10	15
Arkansas.....	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	2	1
Oklahoma.....	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	11	13	10
Kansas.....	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Nebraska.....	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Iowa.....	0	0	0	0	0	0	0	0	5	6	7	1	17	6	27	19	14	14

Autopsy.—No. 9228. (Performed by Dr. Miles E. Foster): There were several scattered petechiae in the skin of the abdomen and chest and in the pleurae and peritoneum. The spleen was soft and mushy; it weighed 300 grams. Grossly, the remaining organs were essentially normal. Microscopically, numerous arterioles in most of the tissues showed perivascular infiltration of lymphocytes, swelling and edema of the vessel walls and proliferation of the endothelial cells (fig. 1). A few of the vessels showed necrosis of segments of their walls. A few thrombi were present. There were vascular lesions in the following tissues (in the order of decreasing severity): mediastinal lymph nodes, pancreas, urinary bladder, skeletal muscle, adrenal glands, brain, liver, myocardium and spleen. No definite micro-infarcts were present. There were zones of demyelination around diseased arterioles in the cerebrum. The lungs, kidneys, uterus, ovaries, and skin showed no acute vascular changes in the sections examined.

Whole blood from the right auricle was injected into guinea pigs, intraperitoneally. None of the guinea pigs showed a febrile reaction. Aerobic and anaerobic cultures of the patient's blood showed no growth after two weeks.

Case 2. W. R. R., a white physician, aged 54 years, was admitted to Barnes Hospital on July 22, 1941, with the complaints of fever, headache and abdominal discomfort. On July 13 he had visited his farm near Salem, Illinois, and while there had removed a tick from his leg but had noticed no blood. On July 19 he visited his farm again but felt fatigued and had chilly sensations all afternoon. That evening he had a headache and general abdominal soreness; he felt slightly nauseated but did not vomit. These symptoms persisted and his temperature was noted to range between 38 and 39.5 C.

Physical Examination.—At the time of admission the patient's temperature was 39.6 C., pulse 108 per minute, and respirations 22 per minute. He was very drowsy and slept much of the time but answered questions when awakened. There was a fine macular rash over the thorax anteriorly, and several papular lesions on the right loin, abdomen, right leg, the soles of the feet and the palms of the hands. The blood pressure was 134/74. Lungs were clear. There was slight tenderness in the left upper quadrant of the abdomen but the spleen was not palpable. The remainder of the physical examination was essentially negative.

Laboratory Data.—Red blood cell count was 4,840,000, hemoglobin 95 per cent, white blood cell count 5,800, differential count showed 37 stabs, 44 polymorphonuclear leukocytes, 16 lymphocytes and 3 monocytes. Three days after admission the total white blood cell count was 8,200 and differential count showed 3 juveniles, 75 stabs, 13 polymorphonuclear leukocytes, 6 lymphocytes and 3 monocytes. The urine was normal except for 2 plus albumin on one occasion. Blood non-protein nitrogen was 36 mg. per cent. Kahn reaction was negative. A blood culture taken on the day of admission was sterile. The blood serum did not cause agglutination of *Bacillus proteus* OX 19 or X 2 but did cause agglutination of *Eberthella typhi* in dilutions of 1 to 20, 1 to 40 and 1 to 80.

Citrated whole blood taken from the patient on the third day of the illness was injected intraperitoneally into guinea pigs. The animals showed febrile reactions beginning on the fifth to seventh days after injections and the infection was successfully transmitted for five generations. Five guinea pigs recovered from the infection and several weeks later were inoculated, together with five control animals, with known spotted

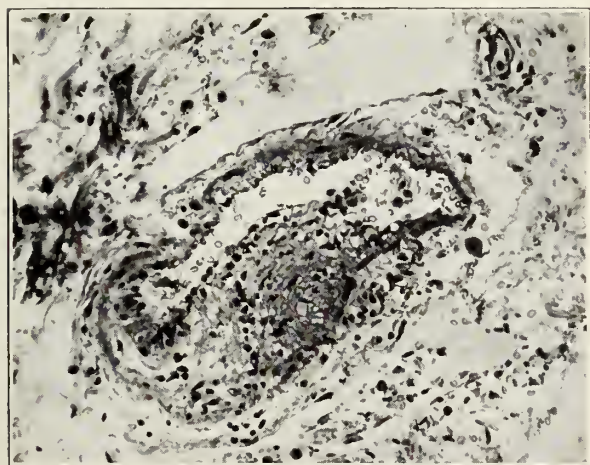


Fig. 1. (Case 1) (X200). Edema, swelling, endothelial proliferation and lymphocytic infiltration of a small artery near a mediastinal lymph node.

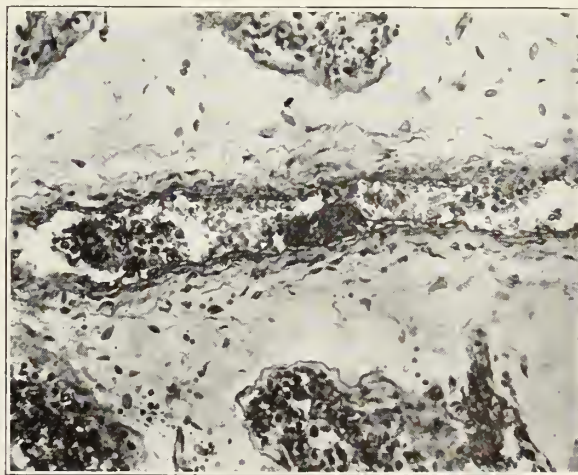


Fig. 2. (Case 2) (X200). A small blood vessel in the testis showing endothelial proliferation and a small mural thrombus.

fever virus obtained from the Public Health Laboratory at Hamilton, Montana. All of the recovered animals failed to develop fever or other evidence of infection, while all the controls became sick and four of them died.

A biopsy of the skin including one of the macules was taken on the fourth day of the illness and this showed a histologic picture compatible with the diagnosis of spotted fever although no rickettsiae were found in the Giemsa-stained sections.

On the seventh day of the disease a spinal puncture was performed and the spinal fluid was under increased pressure. The fluid was xanthochromic, contained no cells and gave a 1 plus Pandy reaction. There were 25 mg. per cent of protein present and the gold curve was 0012100000. The spinal fluid sugar content was 41 mg. per cent and the sodium chloride content was 639 mg. per cent. Culture yielded no growth.

Course and Treatment.—On the evening of the admission the patient had a severe shaking chill lasting twenty minutes. The following day his headache was more severe and he had a backache. During the second hospital day many new small macules appeared on the wrists, hands, palms and the soles of the feet. He slept much of the time and complained of muscular tenderness and slight epigastric discomfort. He perspired profusely and had repeated chills; the temperature varied between 39.0 and 40.0 C. and the pulse was persistently slow in proportion to the fever. On the fourth hospital day he developed hiccough and was placed in an oxygen tent. The following day there was slight stiffness of the neck and Kernig's sign was present bilaterally. The muscles were by now exquisitely tender. The patient was given a transfusion of 250 cc. of fresh citrated blood from a donor who had had Rocky Mountain spotted fever one year previously, but at the time of the transfusion the donor's blood did not agglutinate *Bacillus proteus* OX 19. Another 250 cc. of fresh blood from the same donor was given the next day. During the last two days of his illness the temperature fluctuated rapidly between 38.2 C. and 40.7 C., and the blood pressure ranged between 84/60 and 128/80. Scattered petechial skin lesions appeared on the lower abdomen, back and buttocks. On the evening of July 27 he hiccoughed almost constantly, pulse was weak, respirations rapid, skin was wet and clammy. Slight icterus was noted. The following morning he was comatose; death occurred later that day.

Autopsy.—No. 9334. (Performed by Dr. Irving I. Goodof): The skin, sclerae and mucous membranes showed a slight icteric tint. There were numerous macules in the skin and a few petechiae in the cortices of the kidneys. The spleen was enlarged, weighing 700 gm., and was soft and grayish red. The liver weighed 2,600 gm. and showed fatty degeneration. Microscopically, foci of necrosis were seen in the walls of the arterioles and capillaries of most of the organs. Many blood vessels showed proliferation of the endothelial cells and a few were surrounded by lymphocytes. There were thrombi in the arterioles of the heart, pancreas and testis (fig. 2). No micro-infarcts were observed. The following tissues contained vascular lesions (listed in the order of decreasing severity): heart, pancreas, spleen, testis, skeletal muscle, skin, kidney, brain, liver, adrenal gland and lung. The urinary bladder and gastrointestinal tract showed no lesions in the sections examined.

Autopsy Bacteriology.—Blood cultures were sterile after two weeks. Guinea pigs were inoculated intraperitoneally with a mixture of whole blood and finely ground splenic tissue. The animals developed fever starting on the fourth day and were killed on the sixth day. There were no gross lesions. Finely ground splenic and testicular tissues were injected intraperitoneally into two more guinea pigs. These animals also developed fever and when killed showed enlarged spleens and edema of the scrotum. A small amount

of exudate present in the tunica vaginalis contained intracellular diploid organisms when stained with Giemsa stain. The finely ground tissues of the second group of animals were injected intraperitoneally into a third group of guinea pigs all of whom developed fever, an enlarged spleen and edema of the scrotum. Intracellular organisms were seen in smears of splenic and testicular tissues.

Case 3. M.F.G., a white housewife, aged 60 years, entered Barnes Hospital on July 16, 1942, complaining of drowsiness and fever of two weeks' duration.

The patient had always enjoyed excellent health until eight weeks prior to admission when she began to have dizzy spells and headaches. These dizzy spells grew progressively worse and she became irritable and nervous. She frequently would become drowsy and sleep for several hours at a time during the day, which she had never done before. She lost 20 pounds in weight in this two month period.

The patient lived on a farm near New Douglas, Illinois, and kept two dogs which frequently were covered with ticks. Three weeks before admission a neighbor picked a tick off the patient's back. A week later the patient developed fever, the temperature ranging between 100.0 and 103.0 F. A week before admission she began to have backache and this became quite severe. Two days before admission she became incontinent of urine. Her headaches, which she had had for two months, became much more severe. Somnolence progressed and for the last few days before entering the hospital she had slept almost constantly.

Physical Examination.—At the time of admission the patient's temperature was 39.7 C., and the pulse rate was 94 per minute. She appeared acutely ill and was very drowsy but could be aroused. There were numerous small red macules, ranging in diameter from 2 to 4 millimeters, distributed over the lower extremities; a few of these were present on the lower abdomen but they were most numerous on the ankles and feet, including the soles of the feet. Some of these macules were hemorrhagic and resembled large petechiae. The lungs were clear. The blood pressure was 116/76. The heart was not enlarged, the rhythm was regular and a systolic murmur was heard over the entire precordium. The abdomen was poorly relaxed but there was no tenderness and no masses were felt. The patient's neck was rigid but no Kernig's sign was present. The tendon reflexes were symmetrically hyperactive.

Laboratory Data.—The urine contained 1 plus albumin and a few red blood cells. A urine culture revealed the presence of a nonhemolytic streptococcus, staphylococcus albus and diphtheroids. The red blood cell count was 3,360,000, hemoglobin 11.9 gm., white blood cell count 9,650; the differential was normal. The Kahn reaction was negative. The stool was guaiac negative and on culture was found to contain only bacteria normally present in the intestines. A lumbar puncture was performed and the spinal fluid was clear, the pressure was 125 mm. of water, there were four cells per cubic millimeter and no bacteria; the spinal fluid protein was 46 mg. per cent, sugar 120 mg. per cent; the Wassermann reaction was negative, and the colloidal gold curve was 4433331000. Spinal fluid culture showed no growth. The blood sugar was 91 mg. per cent, and the nonprotein nitrogen was 22 mg. per cent. Blood cultures taken on four different occasions showed no growth. The blood serum did not cause agglutination of *Eberthella typhi*, *B. tularensis* or *Brucella melitensis*, but did cause agglutination of proteus OX 2 up to a dilution of 1 to 40, and proteus OX 19 up to a dilution of 1 to 1,280. This was checked on four different days always with approximately the same results although the titer fluctuated somewhat.

On July 17 a guinea pig was inoculated intraperitoneally with 5.0 cc. of blood from the patient. The guinea pig's temperature ranged between 101.8 and

102.7 F. during the first forty-eight hours; on the third day the temperature was 104.8 F., on the fourth day it was 106.4 F., and on the fifth day it had dropped again to 103.8 F. No scrotal swelling was noted. The animal was killed and examination of the tissues revealed neither gross nor microscopic lesions except for a bronchopneumonia. Thus, it was not possible to decide whether the guinea pig's fever was caused by the organism of spotted fever, by some other organism present in the patient's blood, by the bronchopneumonia, by the protein of the inoculated blood or merely by the high temperature of the summer weather.

One of the hemorrhagic macules on the patient's ankle was biopsied on the sixth day of the illness. This showed swelling and proliferation of the endothelial cells of the capillaries, slight perivascular infiltration of lymphocytes and monocytes and a few red blood cells free in the superficial dermis. The changes were consistent with the diagnosis of Rocky Mountain spotted fever.

Course and Treatment.—During her first three days in the hospital, the patient's temperature ranged between 38.0 and 39.5 C. and she slept almost constantly. She could be aroused but her answers to questions frequently were irrelevant and it was difficult to hold her attention. She was incontinent. On July 19 (the third hospital day) after skin and conjunctival tests were found to be negative, she was given 2.0 cc. of anti-Rocky Mountain spotted fever rabbit serum* intramuscularly, followed two hours later by another 46.0 cc of the same serum. That evening her temperature rose to 39.6 C. The following morning she was more alert but her temperature was still 39.0. That afternoon, July 20, she was given another 48.0 cc. of serum. On July 21 she was much brighter although the temperature remained unchanged. Skin lesions on ankles and feet which had been fading for several days were now quite faint. By July 23 her temperature was down almost to normal and never rose above 38.0 C. from that time on. She became progressively more alert and cheerful. On July 26 she complained of precordial pain which was relieved by nitroglycerin; she coughed up a small amount of blood-tinged sputum on one or two occasions. An electrocardiogram was normal for a patient of her age. The pain continued for several days and then disappeared spontaneously. From July 30 until her discharge 11 days later the patient felt entirely well. Although alert and cheerful, she at times assumed queer positions in the bed, gave silly answers to questions and, in general, acted peculiarly. The spinal fluid was again examined a few days before discharge, the findings being essentially the same as on admission.

This patient was thought to have some chronic disorder, probably cerebral arteriosclerosis upon which her acute attack of spotted fever was superimposed.

DISCUSSION

These three cases of Rocky Mountain spotted fever illustrate a feature common to all rickettsial disease, that is, the marked variation in the clinical manifestations and the unreliability of any single diagnosis procedure.

In case 1 the diagnosis of Rocky Mountain spotted fever was based on the typical clinical picture of chills, fever, generalized aching, disorientation, petechiae and a positive Weil-Felix reaction of the blood serum. There was no definite history of a tick bite and guinea pigs inoculated intraperitoneally with the patient's blood did not develop fever or any other evidence of infection. No biop-

sy was taken, but at autopsy vascular lesions characteristic of spotted fever were found.

The absence of a history of a tick bite is not unusual although the tick is generally accepted as the vector by which the causative organisms, *Dermacentroxenus rickettsii*, is transmitted to man. Many patients with the disease are not aware of having been bitten but do remember crushing a tick between the fingers or removing a tick from an animal. Various species of ticks may convey the organism to man from infected wild or domestic animals or birds; in the western states it is usually the wood tick, *Dermacentor andersoni*, while on the Atlantic seaboard it is more apt to be the dog tick, *Dermacentor variabilis*. Most cases of spotted fever occur in the late spring and summer when the ticks are most prevalent.

The second patient removed a tick from his leg but did not think he had been bitten. One week later he developed chills, fever, somnolence, generalized aching and petechiae. The seven day incubation period was about the average of the accepted wide variation of two to twelve days. The generalized petechial rash involved the palms of the hands and the soles of the feet. This is a common distribution for the rash of Rocky Mountain spotted fever, whereas in the somewhat similar rickettsial infection, typhus fever, the palms and soles are almost always spared.

As in this case, the Weil-Felix reaction may be negative. However, it has been shown that repeated attempts will usually reveal the presence in the blood serum of antibodies which cause the agglutination of various strains of *Bacillus proteus*. The strains OX 19, OX 2, and OX K are commonly used to demonstrate the Weil-Felix reaction characteristic of rickettsial diseases. As a rule, in typhus an agglutination occurs in high titer with *Bacillus proteus* OX 19, and in relatively low titer with OX K, while in spotted fever an agglutination occurs in low titer with both strains.¹ Actually, this agglutination pattern is not sufficiently constant to have much differential diagnostic value in a specific case. Furthermore, a *Bacillus proteus* infection anywhere in the body may give rise to a positive Weil-Felix reaction and such an infection must be ruled out before this agglutination test can be considered indicative of rickettsial disease. Casteneda² believes that this phenomenon is due to the possession of a common carbohydrate antigen by the two organisms.

Fitzpatrick and Hempil³ have shown that in rabbits experimentally infected with *Dermacentroxenus rickettsii* the agglutinins against *Bacillus proteus* rise to a high titer in the second week, and the titer falls during the fifth week. The agglutinins disappear when the blood of the rabbits is no longer infectious to guinea pigs. It has not been demonstrated that the agglutination curves in man have the same characteristics.

Citrated whole blood from patient 2 was infectious for guinea pigs when inoculated intraperitoneally; the animals developed fever in from five

* Supplied through the courtesy of Lederle Laboratories.

to seven days. When the patient came to autopsy, finely ground spleen mixed with whole blood was inoculated into guinea pigs and these animals had a similar febrile response. With successive passage in guinea pigs the animals also developed swelling, redness and edema of the scrotum characteristic of an infection more extensive than that in the first guinea pig. Typical intracellular diploid organisms were found in smears of the exudate from the scrotal sacs of these animals. This swelling and inflammation of the scrotum is the result of growth of the rickettsiae in a region of low temperature and is almost diagnostic of spotted fever or typhus. Pinkerton⁴ states that by killing the guinea pig and making smears from the scrotal sac, a presumptive diagnosis usually can be made as in typhus the cells are packed with rickettsiae, while in spotted fever the organisms tend to be longer and have a characteristic lanceolate form.

The skin biopsy, taken to include a petechia, substantiated the diagnosis in this case. Although not pathognomonic of Rocky Mountain spotted fever, the perivascular infiltration of lymphocytes and monocytes and the swelling and proliferation of the lining cells of the small blood vessels were in keeping with such a diagnosis. At autopsy the microscopic changes observed in many organs were similar to but more extensive than those in the biopsy.

Even with careful fixation and staining and diligent search it is extremely difficult to demonstrate rickettsial organisms in the cells of the walls of the diseased arterioles. The biopsy sections in both case 2 and case 3 were fixed in Regaud's solution and stained by Giemsa's method. No organisms were found in these sections nor in the microscopic sections from the autopsies in cases 1 and 2.

In case 3 the clinical picture was distorted by a mental cloudiness which existed prior to the contact with the tick. The diagnosis of Rocky Mountain spotted fever was based on: (1) the history of a probable tick bite followed by an incubation period of one week, (2) the sudden onset of a febrile illness with a petechial rash on the soles, ankles and legs, (3) a positive Weil-Felix reaction, and (4) biopsy findings similar to those of case 2. The slight febrile reaction of a guinea pig inoculated intraperitoneally with whole blood from the patient was of questionable significance. The disease was of at least two weeks' duration at the time the blood was drawn. Positive results are most readily obtained with blood drawn at the height of the illness.

It is difficult to evaluate the therapeutic effect of the serum since it was given late in the course of the disease. An evaluation of antiserum must await further reports.

The signs and symptoms are correlated fairly easily with the pathologic changes. The toxicity was a manifestation of the widespread infection. The aching and petechiae may be explained by the inflammation of the blood vessels, plus the endothelial proliferation of the intima leading to throm-

bosis with vascular occlusion. The occlusions frequently cause microscopic infarcts if the patient lives long enough for ischemic necrosis to develop. The brain may exhibit panangitis and thrombosis of small vessels with micro-infarcts which contribute to the stupor and to death.

The findings at autopsy in cases 1 and 2 were typical of the changes usually seen in Rocky Mountain spotted fever when the infection is extensive and of short duration. Around the small blood vessels there was an infiltration of lymphocytes and monocytes. Segments of arteriolar walls were swollen and edematous and sometimes necrotic. The endothelial linings showed clumps of swollen cells and occasional hyaline mural thrombi. The duration of illness in both cases was insufficient for the formation of micro-infarcts. The zones of demyelination around the blood vessels in the brain were interpreted as being evidence of ischemia of short duration in those areas.

Both of the patients who died were placed in oxygen tents, one of them received a course of treatment with sulfathiazole and the other was given two blood transfusions from a patient who had recovered from Rocky Mountain spotted fever a year previously. The one patient in this series who recovered was treated with anti-Rocky Mountain spotted fever serum, but there was no convincing evidence that serum therapy played any part in bringing about recovery.

At the present time one must conclude that treatment is entirely symptomatic and supportive. Patients must be kept on complete bed rest and sedatives should be given when necessary. Abdominal distention should be guarded against and mild cathartics or enemas resorted to when necessary. The diet should be easily digestible and adequate in calories and vitamins. A large fluid intake must be maintained.

Anti-Rocky Mountain spotted fever rabbit serum only recently has been developed and has not yet been given an adequate trial. An opinion regarding the value of this form of treatment must be withheld until further reports are available.

Baker⁵ advocates the intravenous administration of neosalvarsan dissolved in an aqueous solution of metaphen. Neosalvarsan 0.3 gm. is dissolved thoroughly in 10 cubic centimeters of an aqueous solution of metaphen and the resultant mixture is warmed and injected intravenously. The injection is repeated at three to four day intervals. Baker has used this treatment on more than thirty cases of spotted fever all of whom recovered. We have had no experience with this method of treatment.

SUMMARY

In Missouri and surrounding states reported cases of Rocky Mountain spotted fever are becoming more numerous. Three cases of the disease are presented; two of the patients came to autopsy while the third recovered. The patient who recovered was treated with anti-Rocky Mountain

spotted fever serum but it is not clear whether or not this influenced the course of the disease.

Barnes Hospital.

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ROCKY MOUNTAIN SPOTTED FEVER

REPORT OF TWO CASES

RALPH S. CASFORD, M.D.

KANSAS CITY, MO.

Rocky Mountain spotted fever is a disease that has been well known and understood in the areas of the United States in which it has been seen most frequently; namely, the Bitter Root Valley in Montana and some parts of Idaho. The movement of troops and other individuals of the United States during the present war probably in a measure has been responsible for its manifestation in other areas. From a not too careful inquiry the opinion has developed that no instance of Rocky Mountain fever has been brought to attention in Kansas City for the last fifteen years and gives rise to the assumption that the clinical and laboratory findings might be of some interest to the profession in that section of the state.

REPORT OF CASES

Case 1. Henry M., aged 13 years, several days previous to the onset of his illness, had spent a couple of days in the Ozarks. Subsequently he complained one afternoon of headache (frontal) with pains in his back and legs and was found to have some elevation of temperature and was put to bed. The next morning he felt considerably better and was allowed to be up and around. The fever and symptoms were relieved. The following afternoon he had quite severe chills with recurrence of headache and photophobia. On examination the patient showed extreme restlessness, the sclerae were infected, pulse rapid and regular and he was complaining of a severe frontal headache. Covering the feet including the soles was a rather bright maculopapular rash extending up to a few inches below the knees. There was a similar rash on the hands and arms up to the elbows. Temperature was 103.5 F., pulse 100, respiration 25. He was referred to Trinity Hospital and remained there for approximately one week at which time the temperature began to recede and improvement was definite. The laboratory findings were: red blood count 3,780,000; white cell count 9,700; Hb. 74 per cent; urine was amber, clear, acid, specific gravity 1.011, albumin plus and no sugar; occasional white and red blood cells. Agglutination test for *Proteus* OX19 was positive in a dilution of 1:320. A few days following admission to the hospital the rash began extending up from the knees over the anterior surface of the body and finally became

quite general. This patient lost twenty pounds in weight during his illness.

Case 2. Arthur M., aged 8, brother of other patient, had a similar history and practically identical findings and clinical course. In this patient, however, there was considerably more prostration and quite severe vomiting. The spleen was palpable for three or four days during the height of the disease. Laboratory findings were: red blood cells 4,170,000; white blood cells 19,500; Hb. 81 per cent; polymorphonuclears 78; lymphocytes 19; urine was yellow color, clear, acid, specific gravity 1.013, albumin plus, no casts, three or four white blood cells per high power field. Agglutination test was positive for *Proteus* OX19 in dilution of 1:160 and slightly positive in dilution of 1:320.

227 Plaza Medical Building.

FIBROMA OF THE STOMACH

A CASE REPORT

H. M. WILEY, M.D.

COLUMBIA, MO.

Benign tumors of the stomach are infrequent. They may mimic gastric carcinoma and should be considered in the differential diagnosis of gastric neoplasms. The following case report of a benign fibroma illustrates this point.

REPORT OF CASE

J. W., a male, aged 51, Record No. 4358, was referred by Dr. Charles H. Werner, St. Joseph. The patient was admitted to the hospital on December 9, 1942. His chief complaint was cramping upper abdominal pain which was most severe in the right upper quadrant. This pain had been present for six months and there had been nausea and vomiting for four months. There had been a gradual weight loss of fourteen pounds. Prior to entry, fluoroscopy revealed a lesion of the stomach which was interpreted as gumma because of a previous positive Kahn test. A therapeutic trial of bismuth and arsenic gave no results. The patient was then placed on an ulcer régime with some relief of symptoms. On several occasions the patient had vomited a coffee-colored fluid but denied melena. The past and family history were non-contributory.

Physical examination.—Examination revealed a moderately pale, chronically ill, white male. No Virchow's node was palpable. The abdomen was slightly rounded and there was tenderness on deep palpation with a suggestion of muscle guard in the right upper quadrant. No definite palpable abdominal masses were present. Rectal examination was essentially negative.

Laboratory Data.—Red blood cells 4,330,000; Hb. 12.3 gm., 78 per cent; white blood cells 11,500; differential normal. Urine was essentially normal. Kahn test was negative. Serum nonprotein nitrogen was 23.4. Albumin was 4.3 gm. per cent, globulin 2.4 gm. per cent, total proteins 6.7 gm. per cent and a/g 1.7.

The gastric analysis follows:

Specimen	Amount	Free HCl.	Total Acid	Combined Acid
Fasting	30 cc.	0	14	14
1	52 cc.	3	11	8
2	26 cc.	25	30	5
3	16 cc.	8	26	18

Stool examination on three successive days showed occult blood.

From the Ellis Fischel State Cancer Hospital, Columbia, Missouri.



Fig. 1. Films present a sharply defined, filling defect on the lesser curvature. Fluoroscopy showed that peristalsis and rugal patterns were absent in the region of the deformity. The mass was easily palpable and could be "rocked" on its base.

Roentgen Ray Examination.—Gastrointestinal series showed a large, apparently lobular filling defect in the gastric body, antrum and pylorus. (See Figs. 1 and 2). There was also abnormal bowel pattern. The roentgenologist's diagnosis was gastric neoplasm and deficiency pattern of the small intestines. The chest plate was normal.

The patient was placed on a high caloric, high vitamin, bland diet with supplementary vitamin concentrates. Two days preoperatively, he was given 500 cc. of citrated whole blood. The preoperative diagnosis was gastric



Fig. 2. Note that intact mucosa extends over the surface of the tumor except at the tip where ulceration has taken place.

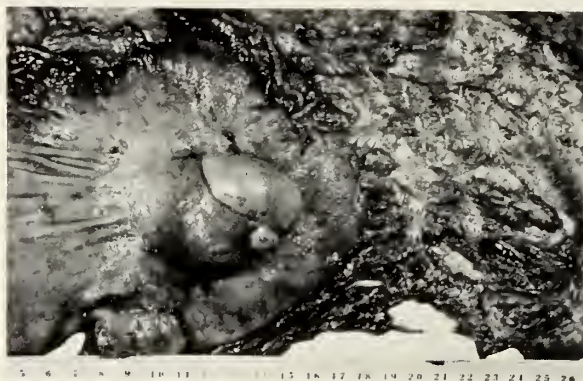


Fig. 3. Gross appearance of excised tumor.

carcinoma. On the ninth hospital day, the patient was taken to surgery. At operation, there was a palpable mass in the stomach which was somewhat movable and seemed to be attached to the superior anterior portion of the lesser curvature. There were small white areas on the greater omentum and several of the lymph nodes in the omentum and near the pylorus were enlarged. There was no evidence of distant metastasis. Because of the nodes noted in the omentum, it was removed with the lower three fourths of the stomach. The duodenum was closed and an anticolonic end-to-side gastrojejunostomy oralis totalis with antiperistaltic jejunal alignment (Kronlein) Balfour technic was carried out. The wound was closed with stainless steel wire.¹ This procedure was done with the patient under continuous spinal anesthesia, supplemented toward the end by intravenous sodium pentothal for control of restlessness.

Pathology.—On opening the stomach along the greater curvature, a pedunculated tumor mass measuring 5 cm. in height and 2 cm. in diameter arose from the posterior-superior aspect. The mucosa over it was intact except at its tip where there was superficial ulceration. Sagittal section showed that the tumor apparently originated in the submucosa but did not involve the muscle (See fig. 3.) The omentum showed numerous, small, firm lymph nodes. Microscopically, the gastric mucosa showed marked evidence of chronic inflammation. The tumor was delineated sharply and was shown by differential stain to be made up entirely of connective tissue. It apparently arose from the submucosal connective tissue and showed no evidence of malignancy. All lymph nodes examined showed hyperplasia.

Microscopic Diagnosis.—Fibroma of the stomach. (Lauren V. Ackerman, M.D.)

The immediate postoperative course was satisfactory. However, on the fourth day, the patient was restless and the upper abdomen was tense. Aspiration of the stomach revealed an 850 cc. residual. On the same day, it was found that the total proteins had dropped to 4.3 grams, this drop occurring in spite of 1,000 cc. of citrated blood buffer mixture at operation and 500 cc. of citrated whole blood on the second postoperative day. During the following seven days (fifth to eleventh postoperative days) the patient received four plasma transfusions of 1,000 cc. each and three whole blood transfusions of 500 cc. each. It was found by the eleventh postoperative day that the total proteins had risen to 6.4 gm. per cent. This rise was brought about despite the patient being on gastric lavage or continuous gastric suction. The patient continued to have considerable residual and required daily lavage and parenteral fluids. On the twenty-fifth postoperative day, a barium swallow still showed evidence of partial obstruction at the site of the gastroenterostomy. He was put back on continuous gastric suction for a few days. Following this, the patient tolerated small frequent feedings. He continued

to improve, gained weight and was discharged on his sixtieth postoperative day.

DISCUSSION

Minnes and Geschickter² reviewed 931 benign tumors of the stomach up to 1936. Of these, only forty-two or 4.5 per cent were classified as fibromata. The most common benign tumor is a leiomyoma, which made up 36.6 per cent of these series. Often, the benign tumor is an incidental finding at autopsy. Rigler and Ericksen³ in 6,742 autopsies found that benign neoplasms of the stomach made up 26 per cent of all gastric tumors. Eusterman and Senty⁴ reported a series of twenty-seven benign tumors operated on at the Mayo Clinic between 1907 and 1921, and these made up only 1.3 per cent of all gastric resections for tumor. It would seem from these figures that benign tumors of the stomach frequently are missed clinically.

Grossly, these tumors may be submucosal, intramural or subserous. They are usually slow-growing and many reach a very large size. Lahey and Colcock⁵ have been impressed by the tendency of these tumors to ulcerate, bleed and, at times, undergo sarcomatous change. They tend to remain localized for long periods of time before undergoing malignant degeneration.

Clinically, benign fibromata of the stomach often have no symptoms. In Minnes and Geschickter's review, their one fibroma was asymptomatic. They mention two others that were reported by Scharapo and Pendl² which, because of size, were discovered. They weighed 5,500 grams and 3,600 grams respectively. It is reported by Sugasti⁶ that 17 per cent of benign gastric tumors show no symptoms. If the tumor ulcerates, it may bleed, cause severe nutritional disturbances, secondary anemia, anorexia and weight loss similar to the case presented. Because of the symptoms and findings,^{2,5,7} a diagnosis of malignancy is often made. If the tumor becomes large enough, obstruction may occur. The roentgenologist is best suited to make the correct diagnosis, but this is often difficult.^{8,9} Moore⁹ feels that benign tumors of the stomach have certain characteristic signs. They present a filling defect that often is circumscribed, frequently on the gastric walls, leaving the curvatures regular and pliant. The rugi surrounding a benign tumor are usually quite normal in their arrangement. There is little disturbance of peristalsis and retention is uncommon unless the lesion is located near the pylorus. Moore⁹ feels that the stomach should be examined, with the walls approximated and with only a small amount of barium in the stomach. Gastroscopy may aid in the diagnosis of these tumors.¹⁰ The most difficult lesion to differentiate from benign tumor of the stomach is the circumscribed polypoid type of gastric carcinoma.

The treatment of a benign gastric tumor is surgical and gastric resection is preferable to local excision, particularly in view of the chances of sarcomatous degeneration. The type of resection

will of necessity vary with the location, size and extent of the lesion. In long-standing gastric lesions similar to this case, adequate preoperative care is essential. The marked drop in serum proteins after operation showed that this patient had low reserve protein stores. The postoperative gastric retention was probably due to edema of the gastro-enterostomy stoma, which was in turn due to the hypoproteinemia.¹¹ This hypoproteinemia is best treated by a bland diet high in proteins, plasma and whole blood transfusions. Parenteral administration of amino acids probably would be helpful in these patients, as has been suggested by Elman^{12,13} and Brunschweig.¹⁴ Continuous spinal anesthesia for this type of prolonged abdominal procedure, in which operation is in the upper abdomen and good muscular relaxation is needed, has proved to be of great value. The wound was closed with fine alloy steel wire after the technic of Jones.¹ This type of closure has resulted in a definite decrease in wound dehiscence and infections. During these long procedures, fluid is started by the intravenous route before the operation is begun. This helps control many emergencies that arise, making it possible to give intravenous medication at a moment's notice.

This case well illustrates the difficulty in the diagnosis between a large benign, ulcerated tumor of the stomach and a carcinoma.

CONCLUSIONS

A case of a benign fibroma of the stomach has been reported. The clinical, roentgenologic and pathologic features of these tumors have been discussed. The surgical technic has been described. The differential diagnosis between benign and malignant tumors of the stomach has been emphasized. The prognosis of the case reported is excellent.

Ellis Fischel State Cancer Hospital.

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CASE REPORTS OF THE BARNES HOSPITAL

CLINICAL AND POSTMORTEM RECORDS USED IN WEEKLY
CLINICOPATHOLOGIC CONFERENCES AT BARNES
HOSPITAL, ST. LOUIS

W. BARRY WOOD, JR., M.D., AND ROBERT
A. MOORE, M.D., Editors

CASE 17

PRESENTATION OF CASE

A white man of the City of Lagos, Nigeria, entered the hospital on July 20 and died on July 25.

Chief Complaints.—Headache, backache, pain in the limbs, fever and malaise.

Present Illness.—On the evening of July 18, while friends were visiting at his house, the patient developed a rather severe headache and general malaise. This headache persisted the following day and was somewhat worse but the patient was able to be up and about. On July 20 the headache increased in intensity, and severe backache and pain in the limbs developed. He felt feverish and had some nausea but no vomiting. Since the day of onset he had taken 5 grains of quinine daily.

Physical Examination.—Temperature was 102.8 F., pulse 108. Patient appeared acutely ill, so much so it was not possible to question him too closely. There was no jaundice. The face was flushed and the conjunctivae were injected. Eyes appeared filmy. Tongue was dry and coated and the edges were red; there was some pyorrhea. Chest on examination was stated to be normal but no details of the heart or lung findings were recorded. The abdomen was normal except that palpation of the epigastrium revealed some superficial sensitiveness to touch and deeper palpation brought on nausea. The liver and spleen were not palpable. Neurologic examination was not recorded.

Laboratory Findings.—Blood count: red blood cells not stated, hemoglobin 80 per cent. White blood cells 10,000; differential count: polymorphonuclear cells 81 per cent, lymphocytes 14 per cent, mononuclear cells 1 per cent, degenerated cells 4 per cent. Malarial parasites were not found in a thick smear. Urinalysis: albumin 1.2 gm. (Esbach); no bile present; there were a few casts.

Course in Hospital.—July 21: Condition about the same as on admission with continuance of pyrexia. Severe headache, backache and nausea persisted. Blood examination again revealed no parasites on several determinations. Urinalysis showed somewhat more albumin than the day previous.

July 22: Fever persisted with some slowing of the pulse. The patient appeared more prostrated

and still complained of severe headache. Physical examination revealed persistence of suffusion of the face with injection of the conjunctivae which showed a suggestion of "muddiness." There was no epigastric tenderness. A slight enlargement of the liver was detected. At 6:00 p. m. that evening a mild delirium developed. There was nausea with retching and a little mucus was vomited. There was one bowel movement during the day with a liquid, offensive stool. Physical examination recorded a dry, furred tongue and slight bogginess of the gums. Laboratory findings showed that the hemoglobin was 80 per cent, the polymorphonuclear cells 81 per cent; no parasites were found in the blood smear. The urine showed a somewhat increased amount of albumin (Esbach 1.5 grams); there was an occasional cast; no bile was present.

July 23: 10:00 a. m. The patient was very lethargic. His face was suffused but the tint was not as bright as on the day previous. The conjunctivae remained injected and muddy and there was a faint icteric tint. The tongue remained dry with red edges. The gums showed slight sponginess. The liver was definitely enlarged two finger breadths and the spleen was not palpable. The patient vomited several times and ejected altered blood. There were several loose offensive stools, dark green in color with flakes of material suggestive of altered blood. The urinary excretion was diminished and reaction was acid; there was a heavy trace of albumin and a rare cast. Examination showed bile to be normal. At 6:00 p. m. definite conjunctival icterus was noted. A few small petechiae had appeared on the forehead. The patient was in mild delirium and restless. Vomiting had ceased but there had been frequent loose, watery, greenish stools.

July 24: 10:00 a. m. Conjunctival icterus was definite and there was a suggestion of jaundice of the skin. The patient continued to be restless but there were intervals of lethargy. No further vomiting had occurred but diarrhea became intense with very frequent watery, dark green stools with flakes of blackish material which gave a reaction for occult blood. Urinary output almost ceased; examination of the $\frac{1}{2}$ oz. secured revealed a large amount of albumin (Esbach 3 grams); bile was present and there were rare casts. During the day slight hiccough developed and the hepatic tenderness became marked. Late in the day marked circulatory stasis was noted and one subconjunctival hemorrhage in the right eye appeared. Although there had been no further vomiting there were very frequent small, watery, green stools. Restlessness, delirium and some respiratory distress as well as intensification of hiccough became progressive. The patient died at 7:00 a. m. on July 25.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: Here is a man who became suddenly ill with headache, pain in the limbs, fever and malaise and was dead within a week. In

reviewing his many symptoms and signs we may conclude that there are at least two organs involved, the liver and the kidneys. He developed jaundice, marked albuminuria and suppression of the urine. What does the clinical record suggest to you, Dr. Harford?

DR. CARL G. HARFORD: It suggests yellow fever.

DR. ALEXANDER: In the history, attention was called to the conjunctivae which were described as injected at one time and filmy at another time. Is this in keeping with yellow fever?

DR. HARFORD: I have seen a description of such findings in yellow fever.

DR. ALEXANDER: He had a coated tongue and the edges were red. Does one find that in yellow fever?

DR. HARFORD: It has been described.

DR. ALEXANDER: This man entered the hospital on the third day of illness with albuminuria. Is that important?

DR. HARFORD: Yes.

DR. ALEXANDER: I understand it is very important. One of the field tests used in the jungle consists of an examination of the urine. If albumin is present to a considerable degree, a diagnosis of yellow fever is made on that sign alone. After the fourth or fifth day the patient's pulse was slow. At first it was rapid. Is that characteristic?

DR. PAUL HAGEMAN: Yes.

DR. ALEXANDER: He vomited altered blood. What about that?

DR. HIROMU TSUCHIYA: Yes, that is important. It is known as "black vomit."

DR. ALEXANDER: What about the jaundice?

DR. TSUCHIYA: I think the patients are extremely jaundiced when the disease is fatal.

DR. ALEXANDER: According to the information available to me, they do not have time to become extremely jaundiced before death. They develop the jaundice on the fourth or fifth day and although they may have severe damage to the liver, death occurs too soon thereafter. It appears that all symptoms this man had are in keeping with yellow fever. Before we consider other diagnoses, Dr. Harford, could you tell us something about the infectious agent of yellow fever?

DR. HARFORD: The infectious agent of yellow fever is a filterable virus transmissible to mice and monkeys. In the mouse after intracerebral inoculation, an encephalitis is produced; in the monkey after intraperitoneal inoculation, a hepatitis is produced similar to that which occurs in the human disease. There is necrosis of the liver cells which may contain intranuclear inclusion bodies. The virus is present in the blood of human cases during the febrile prodromal stage of the disease and as a diagnostic measure can be detected then by the inoculation of the blood of the patient intracerebrally into mice. Evidence for the existence of past infection may be obtained by the use of serum protection tests in mice. It is interesting that the early work of Noguchi suggested that yellow fever was due to a leptospira and this emphasized the simi-

larity of the clinical features of yellow fever and Weil's disease.

DR. ALEXANDER: Did he distinguish between the spirochete of Weil's disease and of yellow fever, Dr. Wood?

DR. W. BARRY WOOD, JR.: No. It seems probable now that Noguchi studied patients who were suffering from Weil's disease rather than from yellow fever.

DR. HARFORD: The disease was first transmitted to monkeys. They developed signs of yellow fever with necrosis of the liver.

DR. ALEXANDER: How is the virus transmitted?

DR. HARFORD: By the mosquito *Aedes aegypti*. The extrinsic incubation period in the mosquito is about three weeks.

DR. ALEXANDER: What about other mosquitoes?

DR. HARFORD: There are other mosquitoes capable of transmitting the virus. Although the *Aedes* mosquito and others similar to it inhabit many other parts of the world, for unknown reasons yellow fever is limited to a relatively few areas.

DR. ALEXANDER: The statement is made that in the jungle there are so few humans and so many infected mosquitoes that there must be other animal reservoirs.

DR. HARFORD: Other animal species are suspected of being reservoirs. I believe, however, that the virus has never been detected in nature except in human beings and mosquitoes.

DR. ALEXANDER: Do wild monkeys acquire the disease?

DR. HARFORD: The virus has never been isolated from monkeys in nature but protective antibodies have been found in the blood suggesting that they have been infected at some time.

DR. TSUCHIYA: In the transmission from man to the mosquito, it is necessary to remember that mosquitoes become infected only by sucking the blood of the infected person during the first few days of the disease after which the virus disappears from the blood.

DR. ALEXANDER: Dr. Wood, is there anything in this case that might suggest another diagnosis?

DR. WOOD: Weil's disease will account for most of the patient's signs and symptoms with the exception of the suffusion of the face. The change in pulse rate is not in keeping with Weil's disease in which there is bradycardia at the onset, followed by tachycardia.

DR. ALEXANDER: Anuria would not be in keeping with Weil's disease.

DR. WOOD: Anuria may occur in the later stages of Weil's disease and the patient often dies in uremia.

DR. ALEXANDER: Are there any other suggestions? Dr. Moore, would you suggest the possibility of malarial fever?

DR. CARL MOORE: It would be quite unusual to have a white blood count of 10,000 with 84 per cent neutrophils in malaria. During the paroxysm the

white count may be elevated, but I doubt if the differential would change to this degree.

DR. WAYNE MACFARLANE: Is it not true that patients with malaria occasionally exhibit a mild jaundice?

DR. TSUCHIYA: I do not think the presence of jaundice in malaria is an important sign but in cases of black water fever, jaundice and hemoglobinuria are two of the cardinal symptoms.

DR. ALEXANDER: Have you seen jaundice without black water fever?

DR. THEODORE E. WALSH: Yes, I have.

DR. ALEXANDER: Is there anything else against the diagnosis of malaria?

DR. HARFORD: This man took quinine and there was no effect. That is against malaria.

DR. EDWARD MASSIE: Although I do not think it likely, what about the possibility of cholera in this patient?

DR. ALEXANDER: Will you tell us what symptoms are in keeping with cholera?

DR. MASSIE: Diarrhea with pea green stools, nausea, fever and albuminuria. Slowing of the pulse is against the diagnosis as is the large tender liver. In addition, the man lived a little too long to have had cholera and, as I stated before, I am merely bringing it up for differential diagnosis.

DR. ALEXANDER: Are there any other suggestions?

DR. TSUCHIYA: Since the patient lived in Nigeria, I would suggest trypanosomiasis and schistosomiasis also for the sake of differential diagnosis.

DR. ALEXANDER: The point that Dr. Tsuchiya makes is that there are many tropical diseases that have a great deal in common. Relapsing fever, especially the type with jaundice, and dengue fever as well as some forms of malaria, schistosomiasis, Weil's disease and yellow fever may be very difficult to distinguish one from another at the onset. As regards the diagnosis in this particular case, the consensus of opinion seems to be that the patient died of yellow fever.

DR. ALEXANDER'S DIAGNOSIS

Yellow fever.

ANATOMIC DIAGNOSIS

Yellow fever.

Midzonal necrosis of the liver.

Acute nephrosis.

Fatty degeneration of the myocardium.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: This case has been made available to us through the courtesy of the Curator of the Army Medical Museum. The pathologic changes are characteristic of yellow fever. True midzonal necrosis of the liver is rarely seen in any disease but yellow fever. We were unable to identify any intranuclear inclusion bodies similar to those described by Dr. Cowdry in 20 per cent of the cases studied by him.

CASE 18

PRESENTATION OF CASE

First Hospital Admission.—The patient was a 55 year old Russian. He entered Barnes Hospital on June 2 on the Surgical Service and was discharged on June 19, 1938.

Chief Complaint.—Mass in the left groin.

Family History.—Mother and father each died in old age of unknown causes. He had two brothers and three sisters in Russia in good health as far as his knowledge was concerned.

Social History.—The patient was born in Russia and lived there for thirty years. In the United States he lived in Texas for five years and in Illinois thereafter. He operated a second-hand furniture business both in Russia and in this country and enjoyed a comfortable economic status. His habits were excellent.

Systemic History.—His teeth had always been in poor condition. He had occasional abdominal pain after eating and believed that milk and milk products disagreed with him. His weight remained constant at 205 pounds.

Past History.—The patient stated that his health had always been excellent and he had consulted a physician for his present complaint and also when he applied for life insurance which was granted him.

Present Illness.—A left inguinal hernia developed in 1917. Since that time he had worn a truss which enabled him to do heavy work without discomfort. In 1934 the inguinal mass increased in size and continued to do so until admission. He entered Barnes Hospital for repair of his hernia.

Physical Examination.—The essential findings were obesity, dirty carious teeth, reddened pharynx and a large indirect inguinal hernia. Examination of the heart was recorded to be normal. Blood pressure was 145/75.

Laboratory Findings.—Blood count: red blood cells 4,789,000, white blood cells 6,900, hemoglobin 95 per cent. Urinalysis normal throughout. Kahn reaction negative.

Course in Hospital.—A large inguinal hernia, the sac of which contained both bowel and omentum, was repaired. The patient made an uneventful recovery.

Second Hospital Admission.—The patient returned to Barnes Hospital on January 29 and was discharged on February 13, 1942.

Chief Complaint.—Mass in right groin.

Interval History.—Shortly after discharge from the hospital in 1938, the patient noted a small mass protruding in the right groin. On the day previous to admission this mass increased appreciably in size and the patient suffered a severe pain over that region. A physician was summoned who attempted to reduce the mass but was unable to do so and sent the patient to the hospital for immediate operation. Otherwise his health had been excellent.

Physical Examination.—The patient appeared in

great distress and suffered severe pain over a mass in the right groin. His general physical findings were the same as those on the previous admission with the following exceptions: A soft, blowing systolic murmur was heard over the apex of the heart and transmitted toward the axilla. The blood pressure was 170/76. No mention was made of a palpable liver or spleen.

Laboratory Findings.—Blood count: red blood cells 4,160,000, hemoglobin 14 grams, white blood cells 9,400, urinalysis entirely normal. Kahn test was negative.

Course in Hospital.—The patient developed a temperature of 39 C. the day following operation. This subsided within three days and his postoperative course was thereafter uneventful.

Third Hospital Admission.—The patient re-entered Barnes Hospital on June 1 and was discharged on June 9, 1942.

Interval History.—The patient had no complaint after leaving the hospital in February for two months. He then noted a swelling of the right hand over which red spots appeared. He consulted a physician who diagnosed a bruise but the patient denied any trauma. The swelling and eruption gradually subsided spontaneously. Shortly after this, fatigue was noted and during the months previous to admission there developed in sequence a nonproductive cough which although not severe was fairly constant, a heavy feeling in the left upper quadrant, a dry, burning sensation in his throat and weakness. The patient had lost some twenty pounds of weight since his previous discharge.

Physical Examination.—Temperature was 37 C., pulse 90, respiration 20, blood pressure 140/60. The patient was obese. He did not appear ill. The skin showed red elevated plaques varying in size on the hands and wrists. There was bilateral axillary and inguinal lymphadenopathy. A node in the axilla the size of an almond was firm but not fixed. The epitrochlear and cervical nodes were not enlarged. The teeth were worn and many were missing. The pharynx was mildly reddened. The lungs appeared normal. The heart was difficult to outline by percussion because of the thick chest wall. There was a faint but definite diastolic murmur heard at the left sternal border and transmitted to the apex. The rhythm was regular. The spleen was felt to descend three finger breadths below the left costal margin on deep inspiration. The liver likewise descended three finger breadths. Herniotomy scars were present. The prostate gland was enlarged to one and one-half times normal. It was smooth and not tender.

Laboratory Findings.—Blood count: red blood cells 2,800,000, hemoglobin 8.6 grams; white cells 6,300; differential count: juveniles 2 per cent, "stab" forms 26 per cent, segmented forms 34 per cent, lymphocytes 36 per cent, monocytes 2 per cent. Urinalysis: specific gravity 1.016, albumin 1 plus, sugar 0; microscopic, occasional granular cast. Kahn test was negative. Stool was negative

for blood. Blood chemistry: nonprotein nitrogen 28 mg. per cent, icterus index 13.4 mg. per cent. Total proteins 8.2 gm. per cent, albumin 3.0 per cent, globulin 5.2 gm. per cent. Hippuric acid test 87 gm. per cent excretion. Electrocardiogram: other than a tendency to left axis deviation, the record appeared normal. Roentgenograms of the chest were negative other than rather prominent hilar shadows. The cervical spine showed moderate hypertrophic changes about the margins of the bodies of the cervical vertebrae. Gastric fill-up showed no abnormalities.

Course in Hospital.—A hematologic consultation revealed the following blood count: red blood cells 3,310,000, hemoglobin 9.8 grams, reticulocytes 3.8 per cent; white blood cells 7,450, differential count: basophils 1 per cent, myelocytes 3 per cent, metamyelocytes 2 per cent, band forms 15 per cent, segmented forms 45 per cent, lymphocytes 21 per cent, monocytes 13 per cent, platelets 760,000. Sternal marrow puncture showed basophils 0.5 per cent, C myelocytes 16 per cent, B myelocytes 3.5 per cent, A myelocytes 2.0 per cent, metamyelocytes 27.5 per cent, band forms 8 per cent, segmented forms 13.5 per cent, primitive cells 18 per cent, plasma cells 6 per cent. Nucleated red blood cells per hundred white blood cells showed normoblasts 21 per cent, erythroblasts 19 per cent, early erythroblasts 7 per cent. One megakaryocyte was seen. From this report it was believed that the peripheral blood suggested a myelophthisic anemia. There was nothing in the bone marrow to support this idea. No diagnosis was made. Dermatologic consultation stated that the eruption on the hands and wrists was the iris type of erythema multiforme. An ear, nose and throat consultation revealed no abnormalities. Cardiac consultation confirmed the aforementioned physical findings. A lumbar puncture revealed 3 cells, a positive Pandy test, negative Wassermann test and 32 mg. per cent protein. Colloidal gold curve was 2555540000. The dynamics were normal. Fluoroscopic examination of the chest showed the diaphragm to be high. The heart was transverse and was questionably enlarged. The aorta was lengthened but not dilated. The lungs appeared clear. During the patient's stay in the hospital there was a very mild elevation in rectal temperature. The general condition remained unchanged and he was discharged undiagnosed.

Fourth Hospital Admission.—The patient re-entered Barnes Hospital on January 15 and died on January 17, 1943.

Interval History.—This was obtained from the patient's wife who was not entirely clear concerning the details of her husband's illness since his last admission. Apparently his condition had remained unchanged since leaving the hospital the previous June. She stated that much of his weight loss was regained the first month or two after his discharge. About September 1942, shortness of breath on exertion developed and the patient could exercise but little. He mentioned to his wife that

his ankles would swell toward the end of the day. Three months before admission, increasing fatigability was evident and notable weight loss was observed. About this time the patient complained of frequent headaches occurring every day or two accompanied by a sensation of dizziness, but the informant did not know the severity, location or character of these symptoms. They persisted until admission. In December the patient began to cough; this symptom increased in severity and frequency until the cough became almost constant and was productive of a copious amount of frothy, white sputum which occasionally contained dark discoloration. Several mild nosebleeds occurred a few weeks previous to admission. Apparently there was no nausea or vomiting although the appetite was poor. The week before entry he had been somewhat restless and disinterested in the external world but there were no apparent memory impairment or mental confusion. The night previous to entry the patient had no particular complaint on retiring. At 2:30 a. m. his wife heard noises in the bathroom and found him lying on the floor. He was mumbling but she could not understand him. The patient was able to raise his right arm but could not raise himself from the floor. His breathing was stertorous. He was taken to the hospital the following morning. On subsequent questioning there was a vague history of some clumsiness and occasional limping on the right occurring at intervals for a few months previous to admission.

Physical Examination.—Temperature was 37 C., pulse 140, respiration 44, blood pressure 170/10. The patient was in coma with a rapid stertorous respiration. He was markedly cyanotic; his skin was pale, moist and warm. There were no petechiae or other eruptions. The pupils were small. They were round and equal and they responded to light. The eyegrounds appeared normal except for pulsating arteries. The disks were well outlined. There was no stiffness of the neck. Arterial pulsations were prominent there and there was evidence of venous distention. The lungs revealed coarse rales throughout both sides with numerous expiratory rhonchi. The apical impulse of the heart was not palpable; no shock or thrill was felt. The left border percussed out on the anterior axillary line. No definite dullness to the right was detected. The heart sounds were obscured by the pulmonary sounds; no murmur could be heard. (The patient was observed about ten days previous to admission by a physician who had seen him in August. He found a large heart with a very loud diastolic murmur to the left of the sternum transmitted to the apex and beyond.) The peripheral arteries showed a typical Corrigan pulsation. The liver and spleen were each palpable three finger breadths below the costal margin. The prostate gland was enlarged as before. Neurologic examination revealed the left arm to be entirely flaccid and the left leg was partially so. Hoffmann and Babinski signs were present bilaterally, more so on the left. Tendon reflexes were hyperactive,

stronger on the right. No further neurologic abnormalities were recorded.

Laboratory Findings.—Blood count: red blood cells 1,750,000, hemoglobin 5.8 grams; white blood cells 17,200; differential count: 10 stab forms, 80 segmented forms, 6 lymphocytes, 4 monocytes. Urinalysis: albumin 1 plus, sugar negative, microscopic, normal except four red blood cells and three or four casts per high power field. Kahn test was negative. Blood chemistry: nonprotein nitrogen 95 mg. per cent, sugar 138 mg. per cent, CO₂ combining power 39 volumes per cent, icterus index 3. Blood culture: hemolytic staphylococcus albus (nonmannite fermenter). Venous pressure was 210 mm. H₂O.

Course in Hospital.—A phlebotomy was performed on admission and 400 cc. of blood were withdrawn. Intravenous aminophyllin and digitalis were given and oxygen was administered. The patient improved temporarily on this medication and the pulmonary edema diminished considerably. A lumbar puncture was done; the initial pressure was 300 mm. water. The fluid was grossly bloody but no crenated cells were found. All laboratory tests on the fluid were unsatisfactory because of blood. Urinalysis done on January 16 revealed specific gravity of 1.017, albumin 1 plus, sugar negative, 6 to 7 red blood cells per high power field and an occasional cast, Bence-Jones protein negative. The temperature remained elevated during the forty-eight hours' residence in the hospital ranging between 38 and 39 C. until a few hours before death when it reached 40 C. Pulse rate likewise was elevated to between 110 and 140. Respirations were between 40 and 52 per minute. After the patient's initial improvement under treatment, pulmonary edema returned, respirations became more labored and rapid and the patient expired.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: This case has excited a great deal of interest because no definite diagnosis was ever agreed upon when the patient was in the hospital. Fortunately, there is a record of two previous examinations for he came to the hospital twice before his present illness, once in 1938 and again in 1942 for repair of an inguinal hernia. The general physical examination was normal at these times except that in 1942 a systolic murmur was heard at the apex. When he came to the hospital last June he complained of weakness, loss of weight and sore throat. He had a large spleen and liver and an anemia. Dr. Moore, you saw him then and you felt that he did not have a blood dyscrasia. Is that correct?

DR. CARL MOORE: Yes, that is correct.

DR. ALEXANDER: With an enlarged spleen and liver, an anemia and myelocytes in the blood, you ruled out any possibility of leukemia?

DR. CARL MOORE: The presence of a few myelocytes in the peripheral blood might suggest superficially the diagnosis of leukemia but the bone marrow showed no leukemic change.

DR. ALEXANDER: You thought that the patient might have a myelophthisic anemia. Tell us what you mean by that and when it occurs.

DR. CARL MOORE: Myelophthisic anemia is a term applied to the anemia produced by any space-filling lesion of the bone marrow. The lesion may be a carcinoma, multiple myeloma, leukemia, Hodgkin's disease, myelosclerosis, or any one of a number of other conditions. The peripheral blood usually shows an anemia of moderate or severe degree with marked variation in size and shape of the red cells and the sporadic appearance of early erythroid or myeloid cells in the peripheral blood.

DR. ALEXANDER: What about the plasma cells? Were they abnormal?

DR. CARL MOORE: A moderate increase in plasma cells may occur in many chronic diseases. The number of plasma cells would have to be much greater before one would suspect the presence of multiple myeloma.

DR. ALEXANDER: Dr. Taussig, when there is an elevated plasma globulin, is the euglobulin elevated?

DR. BARRETT TAUSSIG: Not necessarily.

DR. ALEXANDER: The total protein was 8.2 grams per cent, and the globulin was 5 grams per cent. Under what circumstances may one expect such a high globulin?

DR. TAUSSIG: There are a good many specific diseases such as multiple myeloma, disseminated lupus erythematosus, Boeck's sarcoid and lymphogranuloma inguinale, in addition to other chronic long-standing infections which may give rise to hyperglobulinemia.

DR. ALEXANDER: In approaching this case from a diagnostic standpoint, we might consider those diseases in which there is an aortic valvulitis. When this man came to the hospital in February his admission note recorded no murmur. Dr. Wilson in June picked up a very faint diastolic murmur. Ten days before his last admission to the hospital Dr. Wilson again saw this patient. He noted that there had been rapid progress in that the heart had enlarged considerably to the left and the diastolic murmur was audible all over the precordium. There are very few conditions that will give such a diastolic murmur. One is syphilis. In favor of this is the aortic valvulitis, the colloidal gold curve, and such visceral manifestations as enlargement of the liver and spleen and the anemia. What findings are contrary to a diagnosis of syphilis?

DR. PAUL HAGEMAN: The negative Wassermann reaction in the face of a rapidly progressing lesion.

DR. ALEXANDER: There is a possibility that the primary disease is rheumatic endocarditis. Dr. Massie, is there anything here that would substantiate this diagnosis?

DR. EDWARD MASSIE: There are a lot of things that suggest to me subacute bacterial endocarditis. There was a valvular lesion together with many embolic phenomena including the cerebral lesion, renal lesions, enlarged spleen and perhaps some skin manifestations.

DR. ALEXANDER: He had also an anemia. His fever was not great, however. I think that is important.

DR. MASSIE: The lack of a previous history of cardiac disease is somewhat against the diagnosis of subacute bacterial endocarditis.

DR. ALEXANDER: Dr. Sale, do you think the patient had rheumatic disease?

DR. LLEWELLYN SALE: No, I do not.

DR. ALEXANDER: What else will cause destruction of the aortic valve?

DR. MASSIE: Acute bacterial endocarditis.

DR. ALEXANDER: Yes, he could have had acute bacterial endocarditis such as staphylococcal endocarditis; or one due to pneumococcus, gonococcus, meningococcus or other organisms that engraft themselves on normal heart valves. Dr. Hageman, would you favor the diagnosis of primary bacterial endocarditis?

DR. HAGEMAN: I think the fact that he was afebrile is distinctly against such a diagnosis.

DR. ALEXANDER: Dr. Wood, what else may cause such symptoms?

DR. WOOD: A disease known as Libman-Sachs disease. It does not often involve the aortic valve alone but it may occasionally.

DR. ALEXANDER: For the sake of simplicity, let us call this syndrome disseminated lupus erythematosus. What else is in keeping with this diagnosis?

DR. WOOD: Nearly all of the signs and symptoms in this case may be accounted for by lupus erythematosus. The history of fatigue, the cough, the sore throat and the skin lesions are all very suggestive of this condition.

DR. ALEXANDER: What about the high plasma globulin?

DR. WOOD: That is characteristic of the disease. The anemia, the leukocytosis, and the urinary changes are also in keeping with lupus erythematosus.

DR. ALEXANDER: What about the sex?

DR. WOOD: There are several features of the case that are very much against this diagnosis. First of all the patient was a male and secondly he did not become ill with the disease until he was relatively old. Also, there is no history of arthritis or of pleurisy. In all of the cases recently reviewed by the Reifenshteins there was arthritis and involvement of the pleura.

DR. ALEXANDER: What is the age incidence?

DR. WOOD: Patients with this disease rarely live to be 50 years of age.

DR. ALEXANDER: Are there further comments?

DR. MASSIE: Although I do not consider it likely, there is the possibility that this patient had syphilis with aortic insufficiency and the unusual complication of bacterial endocarditis involving the aortic valve.

DR. HAROLD BULGER: We should keep in mind the fact that an anomalous aortic valve may be the site of origin of bacterial endocarditis. In this case, there are few features of either rheumatic or syphilitic heart disease.

DR. ALEXANDER: An endocarditis would be in keeping with the Libman-Sachs syndrome. However, there was a very rapid extension of valvulitis; so rapid that within six months the murmur increased from one faintly audible to a very loud murmur heard all over the precordium with enlargement of the heart and marked peripheral signs of aortic insufficiency. This strongly suggests a bacterial invasion of the aortic valve, probably engrafted on an underlying lesion. It is of interest to note that in the Libman-Sachs syndrome, secondary invasion by staphylococcus aureus is common.

CLINICAL DIAGNOSIS

? Disseminated lupus erythematosus with non-bacterial verrucous endocarditis.

DR. ALEXANDER'S DIAGNOSIS

Visceral arteritis (Libman-Sachs syndrome).
Bacterial endocarditis (secondary).

ANATOMIC DIAGNOSIS

Subacute bacterial endocarditis involving aortic valve and ventricular surface of anterior leaflet of mitral valve (*Actinomyces graminis*).

Bacteremia (*Actinomyces graminis*).

Focal embolic glomerulonephritis.

Acute arteritis of small cerebral vessels.

Hemorrhage into right cerebral hemisphere.

Partially healed infarct of spleen.

Chronic endocarditis of mitral and aortic valves, slight.

Hypertrophy and dilatation of the heart, 550 grams.

Bronchopneumonia of upper and lower lobes of the lungs (pleomorphic bacterium morphologically similar to *Actinomyces*).

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: As indicated in the diagnosis there was slight previous damage to the mitral and aortic valves. The more recent lesion on the aortic valve showed organization of the base of the vegetation typical of subacute bacterial endocarditis. The organism, *Actinomyces graminis*, is one of the rarer species of *Actinomyces* but has been recognized for over forty years as a pathogen. It was grown in cultures from the vegetation and from the blood, it was identified in the lesions on the heart valve, kidney and lung, and the serum of the patient contained agglutinins in low titer. *Actinomyces* as a cause of subacute bacterial endocarditis has been reported on at least two occasions in the literature.

The embolic glomerulonephritis and the cerebral arteritis were similar to those seen with *Streptococcus viridans*. The immediate cause of death was a hemorrhage into the brain from one of the arteries with an infected wall.

SUMMARY

DR. ALEXANDER: In going back over this case it is important to analyze why we failed to make a cor-

rect diagnosis. We overlooked the improbability that a man of 59 without arthritis and without pleurisy would have disseminated lupus. The statistical chances would be very much against it. We were impressed by the very high plasma globulin. The lesions of the skin appeared to indicate widespread arterial disease with rapid involvement of one of the cardiac valves. There is a group of disorders with widespread arterial damage more or less interrelated and broadly designated as visceral arteritis. This group includes disseminated lupus, Libman-Sachs syndrome, periarteritis nodosa, rheumatic arteritis and the Gross Friedman syndrome. There were many features of this case which suggested that it belonged to this group.

ABSTRACTS AND DIGESTS

STATUS ASTHMATICUS

Prevention of Death in Status Asthmaticus: Value of Bronchoscopy. Leonard Bases and Abner Kurtin. Arch. Otol. 36: 79, 1942.

The authors report a case of status asthmaticus which became progressively worse, lapsing into semi-stupor, despite adequate dosages of adrenalin, of aminophyllin, and continuous inhalations of oxygen by means of a tent. As a last resort, the bronchoscope was passed, without anesthesia, and large amounts of tenacious mucus were aspirated from the trachea and from each main bronchus. There was immediate improvement and an uneventful convalescence until complete recovery. In this instance the bronchoscopic aspiration was life saving.

They also review the protocols of seven patients who died of status asthmaticus and on whom an autopsy was performed at the Mount Sinai Hospital. In six of these the principal finding was obstruction of the tracheobronchial airway by excessive and tenacious secretion. They believe that death might have been averted by bronchoscopic removal of the obstructing secretion.

They also reviewed the reports in the literature from 1923 to 1932 of death due to status asthmaticus. In these, the outstanding finding in the great majority of cases was partial or complete obstruction of the tracheobronchial tree by thick, tenacious, glutinous mucoid secretion.

Comment. Status asthmaticus does not occur often enough to allow any one observer to report a large series of cases treated by bronchoscopic drainage. One is aware, however, of numerous single instances when its use has been followed by prompt improvement in a previously precarious clinical situation.

In view of the pathologic findings it is a sound therapeutic procedure and should not be delayed too long.

C. H. EYERMANN, M.D.

CHILDREN IN MINORITY GROUPS

White House Conference on Children in Democracy, Washington, D. C., January 18-20, 1940. Final Report Published in 1942.

1. Civic and social agencies, labor and consumer organizations, political parties and governmental agencies, not only should place no obstacles in the way of adequate representation and participation of minority groups both in the ranks and in administrative and policy-making activities, but should welcome and encourage such participation.

2. In housing programs financed by Federal, state and local governments, persons should be given equitable benefits according to need, regardless of race, creed and color; moreover, programs should be so administered as to assure important minority groups due participation in the development and operation of housing programs.

3. Employers and labor organizations should establish outspoken policies against discrimination on grounds of race and color; anti-alien bills which exploit race prejudice should be condemned.

4. In the local use of Federal and state grants the same standards should be applied to minority groups as to others, and this should be a specific legislative requirement enforced by public opinion and safeguarded by the right of the individual to appeal and to obtain a fair hearing.

5. The kind of protection afforded by fair-labor-standards legislation and certain social-insurance benefits should be provided for those engaged in agriculture and domestic service, occupations which include a large proportion of certain minority groups.

PARK J. WHITE, M.D.

EPIDEMIC DIARRHEA OF THE NEWBORN

Epidemic Diarrhea of the Newborn. W. B. McClure. *J. Pediat.* 22:60 (January) 1943.

The increase in the birthrate and the growing custom of expectant mothers to enter a hospital for obstetric service has crowded the nursery with newborn infants. As a consequence, the transmission of pathogenic bacteria from one infant to another has become less restrained and epidemics are bound to occur. Not so well known is the specific diarrhea of the newborn infant, a disease having some singular characters which separate it from the infectious diarrhea most prevalent during the summer. Sooner or later every hospital will have the sad experience of losing several newborn infants from this disease.

The etiology is still obscure. In many ways it suggests the symptoms of food poisoning and, yet, many cases occur in those apparently breast fed. Unfortunately, in most hospitals infants receive a bottle at night. Hospitals with infants exclusively breast fed are rare at present. There is no doubt that the disease is conveyed from one infant to another. There is no substantial proof that a virus is the primary cause.

Dr. W. B. McClure, of Toronto, Ontario, reported on four epidemics of this disease. From careful bacteriologic studies the author concludes that "hemolytic colon organisms show a much greater incidence in infants with epidemic diarrhea than in well infants in the same nursery."

Clinically, the disease resembles an intoxication rather than an infection and it is valuable to note that these organisms produce a powerful toxin under certain conditions. Even boiled toxins may produce symptoms in susceptible cats.

"In the epidemic investigated the most toxic strains of hemolytic colon and paracolon producing death in cats were isolated from a fatal case of epidemic diarrhea of the newborn infant."

One may reasonably ask, may not even evaporated milk sometimes contain a bacterial toxin from which the susceptible newborn infant may develop a diarrhea? The final conclusion of Dr. McClure should be memorized by every practitioner: "Close association between complementary feedings and the bathing and changing operations of the infants is a potent source in the spread of the infection."

In connection with this report the studies of Felsen and Wolarsky (*Arch. Ped.*, August, 1942) deserves comparison. Herewith I quote their concept of the pathogenesis of epidemic diarrhea of the newborn infant: "Although the clinical picture of epidemic diarrhea is quite distinctive, no single etiological agent has been demonstrated in all cases. The available evidence indicates that the disease may be due to a bacterium, toxin or virus. The noxious agent is primarily extra-enteric, reaching the intestinal wall either by direct passage along the alimentary canal or through the indirect hematogenous excretory route. The bacteriology and epidemiology is that of the primary extra-enteric disease, usually of the lungs, bronchi, naso-pharynx or sinuses. The intestinal symptoms and signs are focal manifestation of the primary extra-enteric infection. The mode of transfer is from mouth to mouth, rather than from intestine to mouth."

JOHN ZAHORSKY, M.D.

OTOMYCOSIS

Treatment of Otomycosis. Merrill J. Reeh. *Ann. Otol. Rhin. & Laryng.* 51:146-152 (March) 1942.

The external ear canal resembles a dark, warm, moist test tube lined with skin, containing varying amounts of wax and debris. This presents an ideal field for the growth of fungi.

Otomycosis can be manifested by diffuse otitis externa, dry or moist eczema and furunculosis. Some cases of chronic otorrhea will be found to be due to secondary invasion of fungi. When the fungi go through the superficial layers of the skin, inflammation results. The epithelium becomes wet, exfoliates and mixes with fungus debris. This produces not only a favorable culture for fungi,

but bacteria as well, particularly the staphylococcus aureus. The infection may result in complete destruction of the skin with invasion of the perichondrium. It may invade the middle ear, producing suppurative otitis media with its many potential complications. It may go beyond the ear and involve the skin, lymphatics or deep structures of the neck. The usual fungi found in the external ear are of the genus *Aspergillus*; rarely *Penicillium* is found. The fungus debris varies in appearance. It may appear mottled gray like macerated blotting paper, white, like absorbent cotton, black, brown, green or reddish brown. A varying amount of wax and pus may be present also. In the treatment of this series of cases an attempt was made to attain the four objectives stressed by Gill: (1) to cleanse mechanically the external canal from the meatus to the drum head as carefully as possible, avoiding any trauma or maceration of the skin; (2) to reduce local inflammation and allay pain; (3) to limit sporulation; and (4) to leave the parts in such a condition as to prevent recurrence. Medication was usually employed on a cotton wick for periods of from twelve to twenty-four hours during the first two or three days. Following this, medication was employed in the form of "drops" or local application, depending upon the progress of the case. Simple cases were treated for from seven to fourteen days.

Before proper results can be obtained with any substances, the debris must be removed from the canal gently and thoroughly. Attention must be paid to the anterior acute angle. If removal can not be effected mechanically, a gentle lavage with warm water usually will suffice. Medication is best applied on a wick for the first two or three days, leaving the wick for periods of twelve to twenty-four hours.

Thymol, 2 per cent, in cresatin proved to be highly efficient as a fungicide. It did produce considerable burning and discomfort when used in raw canals. Thymol, 1 per cent, in cresatin was found to be equally as efficient as a fungicide. It did not produce burning, but proved to be a good local anesthetic and drying agent similar to cresatin alone. Cresatin alone proved to be excellent, but not as effective as 1 per cent thymol in cresatin. Insufflation of 1 per cent iodine and 1 per cent thymol in boric acid powder produced fair results. It possessed some value as a medication to be used in resistant cases or in cases of chronic otitis media in which associated fungus infection is known or suspected to exist. In general, alcohol preparations proved to be painful and at times increased the inflammation. Ichthyl-glycerine possessed value in early treatment of highly inflamed canals. It was found to be poor as a fungicide. Glycerine preparations usually macerated the canal walls. Occasionally they aggravated a secondary bacterial infection which proved worse than the original condition.

J. L. MYERS, M.D.

GASTROINTESTINAL ALLERGY

An Association of Gastrointestinal Allergy with the Celiac Syndrome. Charles F. McKhann, Samuel Spector and Emily R. Meserve. *J. Pediat.* 22:362, 1943.

After a resume of the theories on the causes of the celiac syndrome which show that the pathogenesis is obscure, the authors present the clinical course of four children who showed very definite evidences of improvement but not a dramatic response, by removal from the diet of foods which gave positive cutaneous reactions. By appropriate tests these cases also showed impairment of absorption of vitamin A before these foods were removed and improved absorption when the symptoms were suspended. In four cases of allergic manifestations other than gastrointestinal, the vitamin A absorption was less than in normal children but more than in the cases with the celiac disease.

They present two additional case histories in which the clinical history suggested gastrointestinal allergy, but the symptoms of intermittent diarrhea with gray, foul-smelling stools and distended abdomen on physical examination suggested the celiac syndrome; both improved following the dietary elimination of the cutaneously reacting foods.

A wide variety of foods gave positive cutaneous reactions and included foods which are helpful in the treatment of this syndrome.

They suggest that there are instances in which gastrointestinal allergy and the celiac syndrome are associated but that it is not clear whether food sensitization precedes and is responsible for the symptomatology of celiac disease or whether the celiac syndrome causes disturbances of absorption with resulting allergy. The failure to absorb vitamin A may be a part of this mechanism.

Comment. The practical significance in this paper is the improvement in these reported cases by removing from the diet the foods thought to have curative value. However, hypersensitivity to specific foods is more likely to produce acute rather than chronic diarrhea and it is difficult to attribute bulky, frothy, pale and offensive stools to the presently accepted lesions and mechanism of the allergic reaction. The tentative interpretations of the authors offer a new therapeutic approach, but before causal relationship between celiac disease and allergy can be established, it will be necessary to study larger groups of patients in whom one has noted, not only the response to a diet based on cutaneous reactions, and different from that usually employed in this syndrome, but also the effect of feeding the assumed allergenic foods.

C. H. EYERMANN, M.D.

A case of human trichinosis following the eating of bear meat is reported in *The Journal of the American Medical Association* for May 22 by Robert S. Westphal, M.D., Albany, N. Y. It is generally considered, he says, that 90 per cent of human trichinosis occurs as a result of the ingestion of pork.

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JUNE, 1943

EDITORIALS

CURTIS H. LOHR, M.D.

PRESIDENT-ELECT, MISSOURI STATE MEDICAL
ASSOCIATION, 1943-1944

At the St. Louis Session, April 18, 19 and 20, the House of Delegates elected Dr. Curtis H. Lohr, St. Louis, to serve as President-Elect for the coming year. Dr. Lohr will be installed as President in Kansas City at the 1944 Session of the Association.

Dr. Lohr was born on January 22, 1897, and obtained the degree of Bachelor of Science from Washington University in 1920 and the degree of Doctor of Medicine from its medical school in 1922. Thereafter, he served as intern and assistant resident physician at the St. Louis City Hospital during 1922, 1923 and 1924. In the latter year he was appointed superintendent and chief resident physician at the St. Louis Isolation Hospital.

It was in the latter position that he attracted general attention by his very efficient management and the reorganization of the administrative arrangement. He initiated methods by which this institution became one of the foremost hospitals for communicable diseases of the country. In fact, he rendered outstanding services in this otherwise obscure position until the expiration of his appointment in 1929. Then he was made Hospital Commissioner for the City of St. Louis where he served with distinction until 1933, always resisting political interference and insisting that the public deserved only the highest degree of medical skill and service. During these years he obtained a fully approved rating for the city's various hospitals from the American College of Surgeons and the American Medical Association, which standing thereafter was maintained easily.

Dr. Lohr has served organized medicine in many capacities. He was Councilor of the St. Louis Medical Society in 1934 to 1936 and again in 1938 to 1940 and was President of the Society in 1937. He has served continually as Delegate to the Missouri State Medical Association for the last eight years and was Councilor for the Third District of the Association for a number of years, during more than



LT. COL. CURTIS H. LOHR, M.C.

a few years of which he was Chairman of the Council (1937-1943).

Since 1937 Dr. Lohr has been superintendent and medical director of the St. Louis County Hospital from which he removed every trace of the political domination that was previously in complete control. He also raised the standing of this hospital so that it is now approved for the training of interns and residents. Its school for nurses also is fully approved.

Dr. Lohr holds many appointments on hospital staffs and on many medical and civic commissions and committees. He has a long military record ranging all the way from private to Lieutenant Colonel of the Medical Corps, U. S. A. In the latter capacity he is Acting Commanding Officer of General Hospital No. 70, which is now assembled for active service in the present World War II.

Space will not permit the mention of Dr. Lohr's many affiliations and the numerous offices which he has held, or is holding at present. Suffice it to mention that he is an indefatigable, strong man who is now in the prime of life. He is always willing and able to work harder and longer than one who is not endowed with such an excellent physique. No physician of our state has done more to promote the specific interests of the medical profession, nor is there any one who has as much energy in reserve for future use in promoting its high aims.

There is no doubt but that the members of the Association are well pleased with the selection by the House of Delegates of a President-Elect so eminently qualified for that honor as well as so respected for those characteristics which he has exhibited repeatedly. He knows the problems which

are to be solved and will face every one of them with a confidence based upon an open mind and a ripe experience.

CONTINUOUS CAUDAL ANESTHESIA IN LABOR

In the short time since Hingson and Edwards began the use of caudal anesthesia or analgesia continuously administered during labor, in January of last year, it has been impossible to evaluate fully the many advantages and potential hazards of the method. However, much has been learned in this time by the many clinicians who have had experience with the procedure. It is commonly agreed by them that the method constitutes a definite advance toward the complete relief of pain during labor. Many believe that it is the best plan yet devised for carefully selected cases.

Some physicians are using it in combination with other analgesics. Yet, there are definite contraindications and risks to be considered. The technic is one that demands the care of a specially trained surgeon or anesthetist. As emphasized by Hingson and Edwards, Gready and Wesseltin, and Vaux, Irving and Lundy in their reports, it is not a method to be used indiscriminately in the home but, rather, in hospitals in which there is available the services of those trained in the technic.

The principles of the method are sound. Its use will continue to increase. However, it must be understood that the procedure under the most ideal conditions will be applicable only to a selected number of cases.

If continuous caudal anesthesia is to be used with safety, those contemplating its use must be fully aware that the method is not without technical difficulty and has many definite contraindications and dangers. In short, those who have had sufficient experience with it advise (1) a thorough technical preparation of the operator, (2) delivery in a hospital, (3) proceeding with caution.

TYPHUS FEVER

Because of the great possibility that diseases unusual in this country, especially tropical diseases, may be brought into this country at the close of the war, more attention is being paid to these diseases. The President of the Association recommended to the Council that meetings be held throughout the state in cooperation with the Army and Navy Medical Corps to instruct Missouri physicians in these diseases and a committee was appointed to plan such meetings.

In this connection an article in a recent issue of the *Statistical Bulletin* of the Metropolitan Life Insurance Company gives a picture of typhus fever in other parts of the world that emphasizes the greater prevalence, and therefore possibility of spread to this country, of a disease unusual on this continent. The article reads:

"Typhus fever continues to claim a large toll of

lives abroad. Ordinarily the advent of spring finds the disease at or just past its annual peak, but when the disease is present in epidemic form the number of cases may continue to mount until May or even later. At the present time a potentially dangerous situation exists in the battle zones and in the occupied regions of eastern Europe, whose starved and ragged population are fertile soil for the spread of the disease. But the facts for those areas are concealed carefully by German censorship.

"Nazi policies are responsible, directly or indirectly, for extensive epidemics of typhus in countries as widely separated as Morocco and Poland. At the same time, numerous cases of typhus are being reported in areas of continental Europe which for generations have been free from the disease. Germany itself is the outstanding example.

"In 1942 typhus raged throughout North Africa. In French Morocco there were 26,000 cases reported; in Algiers (with the last three months incomplete) there were more than 35,000 cases; and in Tunisia (with two months incomplete) more than 16,000 cases were reported. The disease was also rampant in Tripoli and Libya, but no data are available, because of military operations in that area. In Egypt, likewise, the disease was prevalent, with 23,000 cases reported during the year. Thus, in North Africa alone more than 100,000 cases of typhus occurred during 1942, the greatest number in many years, with the situation particularly bad in those areas which had been impoverished and despoiled by the Nazis.

"In some parts of North Africa, however, the situation at present is better than a year ago, although cases continue to be more numerous than in prewar years. It is likely that as a result of the Allied occupation the situation in all of North Africa will be brought under control as normal health services are restored and as more food becomes available.

"Such statistics as there are for Axis and Axis-occupied countries are disquieting. Last year Rumania had more typhus than in any year since 1936 and 1937. Only scattered information is available for the early part of 1943, but the trend was sharply upward during the winter months. In February alone, reported cases in Rumania were 40 per cent more numerous than in February of last year, and the latest data show that in the first week of March they were four times the figure of the corresponding week of 1942. In Germany each quarter last year showed an increase over 1941, with a marked peak in the second quarter of the year. Figures just released for the first seven weeks of 1943 show a total of 800 cases, or nearly twice the number reported in all of the first quarter of 1942. In Bulgaria, typhus was more prevalent in 1942 than for several years back, the number of cases being double those of the preceding year. Data thus far available for 1943 show a further increase, again doubling the rate for the corresponding period of the preceding year, 1942. Hungary likewise suffered more cases last year than in any recent year. In the first few weeks of 1943 cases were

fewer than last year, but still were above 1940 and prior years. Even France experienced some outbreaks in 1942. Although the present incidence of the disease in Spain is far below that of a year ago, when several thousand cases occurred, that country is still suffering from the effects of her Civil War, as well as from the indirect impact of the second World War.

"The outlook for civilian populations of eastern Europe with respect to typhus is grave. To a certain extent the same holds true for some of the Axis armies. It is doubtful, however, whether typhus fever will affect the immediate course of the war. Despite the prevalence of the disease in North Africa before and since our occupation, our military forces have been quite unaffected, only a handful of cases being reported among them. It is likely that this favorable experience will continue, because our military physicians are alert to the dangers our troops run. Although the effectiveness of typhus immunization is still undetermined, sanitary precautions apparently suffice to protect the vast majority of our soldiers from the disease. But until Axis armies are cleared out and order is restored, civilian population in occupied regions everywhere are seriously threatened by this scourge. Only then, when these peoples get enough food and clothing, and when effective public health administration is restored, will typhus fever be brought under control."

NEWS NOTES

Dr. F. E. Luman, Edina, has been reappointed county health officer of Knox County.

Dr. Irene M. Blanchard, Webster Groves, recently was elected president of the Business and Professional Women's Club of St. Louis County.

Dr. A. E. Monroe, Sedalia, was the guest at a dinner in Sedalia on April 21 given in honor of his completion of fifty years in the practice of medicine.

Dr. Don Campbell, Neosho, head of the Newton County Health Unit, was the guest speaker at a meeting of the Business and Professional Women's Club at Neosho on April 13.

Dr. R. M. Ferguson, Webb City, was the guest speaker at a meeting of the Jasper County Chapter of the National Foundation for Infantile Paralysis at Joplin on April 14. He spoke on "Latest Methods of Treatment for Poliomyelitis Sufferers."

Dr. Edwin H. Schorer, Kansas City, was the guest speaker at a health education meeting at the Hickory Grove School, Johnson County, Kansas, under the auspices of the Parent-Teacher Association on April 30.

The Medical Service Plans Council of America will hold its second meeting in Chicago, June 6, at the Palmer House. Delegates to the A. M. A. are cordially invited to attend.

Drs. O. R. Withers and Clifford C. Wilson, Kansas City, were guest speakers at a meeting of the Washington-Nowata-Osage County (Oklahoma) Medical Societies at Bartlesville, Oklahoma, on April 15. Dr. Withers spoke on "Allergy" and Dr. Wilson on "Anorectal Diseases."

At a meeting of the Missouri Chapter of the American College of Chest Physicians held in St. Louis on April 19, the following officers were elected: President, Dr. James L. Mudd, St. Louis; vice president, Dr. Jesse A. Stocker, Mt. Vernon; secretary-treasurer, Dr. Melvin J. Tess, St. Louis. Dr. Herbert L. Mantz, Kansas City, is the governor of the College for Missouri, and Dr. H. I. Spector, St. Louis, is regent for the district.

In an extensive list of public improvements in St. Louis expected to provide large scale employment in connection with the city's postwar plan, the following are included: Max C. Starkloff Hospital, remodel administration building and two ward buildings, \$475,000; Koch Hospital, construct administration building, nurses' home and physicians' quarters, \$1,130,000; City Sanitarium, modernize plumbing and heating systems, \$350,000; City Infirmary, rehabilitate laundry and boiler house, reconstruct steam line, construct new hospital and employees' buildings, \$779,000; St. Louis Training School, construct two dormitories, employees' building, industrial building, cannery and granary and extend service roads, \$553,000; Health Division, construct six health centers, \$1,578,000.

DEATHS

Cuddy, Oren Louis, M.D., Lincoln, a graduate of Barnes Medical College, 1903; member and former president of the Benton County Medical Society; aged 68; died February 19.

Grimes, Walter P., M.D., Kansas City, graduate of the Missouri Medical College of Kansas City, 1901; honor member of the Jackson County Medical Society; Affiliate Fellow of the American Medical Association; aged 71; died April 9.

Eimbeck, Wm. F., M.D., New Haven, graduate of Washington University School of Medicine, 1896; honor member of the Franklin County Medical Society; aged 71; died April 10.

Graul, Henry Philip, M.D., St. Louis, graduate of St. Louis University School of Medicine, 1905; member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 62; died April 16.

Hawkins, Wesley Romeo, M.D., Glasgow, graduate of the Louisville Medical College, 1892; honor member and past president of the Howard County Medical Society; aged 75; died April 17.

Hagerty, Meade E., M.D., Ferguson, graduate of the Baltimore Medical College, 1908; honor member of the St. Louis County Medical Society; retired; aged 59; died April 26.

Burrill, Charles Wesley, M.D., Kansas City, a graduate of Northwestern University Medical School, 1872; honor member of the Jackson County Medical Society; Affiliate Fellow of the American Medical Association; retired; aged 97; died April 28.

INCIDENTALLY

FROM THE EXECUTIVE SECRETARY

It seems evident that proponents of H. B. No. 590 in seeking the right to engage in operative surgery and to use drugs are repudiating the philosophy on which osteopathy relied in its successful efforts to gain a legal foothold in Missouri.—Should not the osteopaths in Missouri, when asking for the right to practice surgery, be required to demonstrate their fitness to practice surgery under the standards that have been set up in Missouri by the State Board of Health, not under differing standards?

If the output of osteopathic schools in Missouri is comparable with the output of medical schools, why was the Basic Science Bill killed in the Public Health Committee of the House, on which Representative Still is a prominent member?

Some people are wondering just why H. B. No. 85 has not been brought up for third reading and final passage in the House. Could it be possible that 76 votes to lower medical practice standards in Missouri are difficult to find?

While the cat's away, the mice will play.—This adage can fittingly be applied to the medical profession versus certain forces interested in boarding what they must consider the "grave train." With approximately 1,200 physicians in service and with those at home using all available time to care for their patients, an ideal opportunity is offered proponents of H. B. No. 85 and H. B. No. 590 to promote these bills with much less opposition.

It would seem that the true test of the curriculum of any educational institution is the effectiveness of the educational program, the competency of the faculty and the capability and enthusiasm of the students.

The Public Health Committee of the House on May 12 held a meeting over the protest and in the absence of Dr. Gray, its chairman.—Apparently ten of the nineteen members of the committee were present representing a quorum.—Rumors are that a vote of nine to nothing resulted in recommending H. B. No. 590 do pass.—It will be interesting to note whether this unusual action of the committee will be considered official by the House of

Representatives.—If the committee reports its action to the House and if the House considers such official, H. B. No. 590 will then be on the calendar for perfection.

It is alleged that the House of Commons in England has voted to postpone action on the Beveridge Plan until the war is over.—This is in line with the idea of putting first things first.

With the ever increasing number of problems calling for solution by the medical profession, can medical societies afford not to continue to hold regular, frequent meetings?—What other source affords such opportunity for the exchange of ideas and for concerted action?—A fundamental of Democracy must necessarily be intelligent action on the part of its adherents.

Should the A. M. A. have a liaison office in the nation's capital to give needed advice and medical counsel to those whose duty it is to consider such important matters?—The House of Delegates of the A. M. A. on June 7 will have an opportunity to answer this question.—Many organized groups and professions find such an office a "must."

MISCELLANY

ADDITIONAL MEMBERS OF THE MISSOURI STATE MEDICAL ASSOCIATION IN MILITARY SERVICE

Adler, Bernard C., Stockton
Bernard, William R., St. Louis
Bilsky, Nathan, St. Louis
Cassidy, Leslie D., St. Louis
Diehr, Maurice A., St. Louis
English, Milton T., Jr., St. Louis
Hennelly, John J., St. Louis
Hummel, Anton J., St. Louis
Jensen, J. Ernest, St. Louis
Kohler, Louis H., St. Louis
Lohr, Curtis H., St. Louis
Mistachkin, Norman L., St. Louis
Mueller, Clarence E., St. Louis
Roebber, H. M., Bonne Terre
Scherman, Victor E., St. Louis
Smith, Dudley R., St. Louis
Starkloff, Gene B., St. Louis
Stewart, John W., St. Louis
Tapper, Stephen M., St. Louis
Vitt, Edwin F., St. Louis

Through error Drs. Paul K. Webb, St. Louis, and William C. Ganley, Kansas City, were reported in military service.

LEGISLATION STATE

House Bill No. 85 is still on the informal calendar of the House of Representatives for third reading and final passage. No action has been taken on the bill since its perfection by a 53 to 52 vote on March 30.

House Bill No. 300, the Doctor Prefix Bill, is in the Public Health Committee of the Senate.

Senate Bill No. 98, the Basic Science Bill, has not been acted on as yet by the Public Health Committee of the Senate.

House Bill No. 319, the naturopathy bill, has been reconsidered by the Public Health Committee of the House and reported out of committee as do pass. It was perfected on May 21.

House Bill No. 421, the Rheumatic Heart Disease Bill, passed by the House on April 14 is awaiting action in the Senate.

The Premarital Blood Test bill, handled by Representative Mittendorf (St. Louis County) in the House and by Senator Falzone (25th District) in the Senate and signed by the Governor becomes effective January 1, 1944. The bill will affect the physicians of this state and for that reason is reproduced here as follows:

"Be it enacted by the General Assembly of the State of Missouri as follows:

"Section 1. That Article 1, Chapter 20, Revised Statutes of Missouri, 1939, relating to marriage and marriage contracts, be and the same is hereby amended by inserting after Section 3364 four new sections, to be known as 3364-A, 3364-B, 3364-C and 3364-D, to read as follows:

"Section 3364-A. It shall be unlawful for the Recorder of Deeds of any County or City to issue a marriage license, to any person, unless such person presents and files with such Recorder of Deeds a report of a negative laboratory serological test for syphilis and an affidavit signed by the applicant that to his or her best knowledge and belief he or she is free from syphilis; or unless, in the case of an applicant with a positive test, such applicant presents and files a certificate from a physician duly licensed to practice in the State of Missouri stating that to his or her best knowledge and belief, after having made a thorough physical examination of such applicant, he or she is not infected with syphilis, or if so infected is not in the stage of the disease wherein it is communicable either to the spouse or the offspring, which said physician's certificate shall have attached thereto a laboratory report of the test for syphilis made by such laboratory; or unless a duly licensed physician presents a certificate stating that one of the applicants for a license to marry is on his or her deathbed and unlikely to consummate the marriage or that an applicant is pregnant. The laboratory report of the negative blood test and the affidavit of the applicant, and the physician's certificate of health with the laboratory report of the test for syphilis attached thereto, shall be made not longer than fifteen (15) days before the date of the issuance of the license and said license shall be void after ten (10) days from the date of issuance.

"The State Board of Health shall have complete control of and shall draw rules and regulations concerning the procedure and methods of making such laboratory examinations and the filing of the reports of such examinations with the State Board of Health, and concerning the affidavits, certificates and other forms necessary for an efficient administration of Section 3364-A through Section 3364-C.

"Laboratory tests shall be made free of charge by the laboratory of the State Board of Health or by such other public health laboratories wherever maintained in the State of Missouri, upon the request of a physician or by an applicant.

"For the purpose of this act, "Laboratory" shall mean any private or public health laboratory duly approved by the State Board of Health of Missouri, or by the State Board of Health of any other state of the United States, or by the United States Public Health Service.

"Section 3364-B. Any Recorder of Deeds who shall unlawfully issue a license to marry to any person who fails to present and file the certificates provided for in this Act; or any physician who shall knowingly and willfully make any false statement in such certificate;

or any person applying for a license to marry who shall knowingly and willfully make any false statement in or concerning the said certificates; or any person making the laboratory tests who shall knowingly and willfully make any false statement in the laboratory report; or any person or persons having knowledge of any matter relating to or pertaining to the examination who shall disclose the same, or any portion thereof, shall upon conviction thereof be deemed guilty of a misdemeanor and punished as such.

"Section 3364-C. If the parties to a marriage are otherwise qualified for marriage, the validity of any marriage under this Act shall not be impaired by any false statement contrary to the provisions of this Act or by the illegal communication of information concerning one or both of the parties to such marriage or by any other violations under Section 3364-A and Section 3364-B. This Act shall become effective on January 1, 1944, and shall be in full force and effect thereafter."

Action on Senate Bill No. 103 relating to state supervision, under the State Insurance Department, of group hospitalization and group plans for medical and surgical expenses has been postponed indefinitely by the Senate Committee on Insurance and Workmen's Compensation.

Senate Bills Nos. 112 and 113, relating to narcotic drugs, are still in committee.

House Bill No. 590 introduced by Representative Still of Adair County which seeks to redefine the "practice of osteopathy" was voted "do pass" at a meeting of the Public Health Committee of the House on May 12. This meeting was called by Representative Wilkinson of Newton County, ranking member of the committee, without the consent and presence of Dr. Gray, chairman of the committee.

Senate Bill No. 79, relating to the regulation and inspection of foods and drugs by the State Board of Health, has been amended, perfected and ordered printed.

Senate Bill No. 28, dealing with the reorganization of the Department of Vital Statistics of the State Board of Health has been amended, perfected and ordered printed.

Senate Bill No. 154, introduced May 20, permits employees under the Workmen's Compensation Act to receive the compensation to which he may be entitled under the act and in addition maintain a civil action against any physician or surgeon for malpractice.

FEDERAL

Appointment of Female Physicians in the Medical Corps of the Army and Navy.—The President has signed the Sparkman bill, H.R. 1857, providing that during the present war and for six months thereafter there shall be included in the Medical Departments of the Army and Navy such licensed female physicians and surgeons as the Secretary of War and the Secretary of the Navy may consider necessary. Those appointed will be commissioned in the Army of the United States or the Naval Reserve and will receive the same pay and allowances and be entitled to the same rights, privileges and benefits as members of the Officers Reserve Corps of the Army and the Naval Reserve of the Navy with the same grade and length of service.

Education of Physically Handicapped Children.—S. 939, introduced by Senator Pepper, Florida. A bill to provide for the education of all types of physically handicapped children. Pending in the Senate Committee on Education and Labor.

Comment.—This bill would authorize an annual appropriation of \$11,580,000 to enable each State to establish, extend and improve services for educating physically handicapped children, defined to include all children who are crippled, blind, partially seeing, deaf, hard of hearing, defective in speech, cardiopathic, tuberculous or otherwise physically handicapped, and who for their education require an expenditure of

money in excess of the cost of educating physically normal children.

The sums to be made available will be used for making payments to States which have submitted, and had approved by the Commissioner of Education of the United States, state plans for the service contemplated by the bill. The Commissioner of Education, out of the appropriation, will allot for each fiscal year the sum of \$40,000 to each State, which will not be required to be matched. The sum of \$9,000,000 will be allotted to the state on the basis of the ratio of the number of their inhabitants aged five to twenty years, inclusive, to the total number of inhabitants aged five to twenty years, inclusive, of all the States as determined by the most recent census. The sum of \$500,000 will each year be made available to the United States Office of Education for the purpose of making studies, investigations, and reports, for the payment of the salaries of officers and assistants, including expenses of attendance at meetings of educational associations and other organizations and for the purchase of equipment.

State plans for services for educating physically handicapped children, to be approved, must provide (1) information on the number of physically handicapped children within the State; (2) for financial participation by the State; (3) for the administration of the state plan by the state department of education or public instruction; (4) for such methods of administration as are necessary for the efficient operation of the plan; (5) that the administering state agency will make such reports as the Commissioner of Education of the United States may from time to time require; (6) for carrying on the education of physically handicapped children as a part of the state program of public instruction; (7) for the equitable distribution of funds between rural and urban areas and among the various types of physically handicapped children to be served; (8) for cooperation with other agencies within the State with the responsibility for services for physically handicapped children.

Benefits for Tuberculous Veterans.—S. 927, introduced by Senator Thomas, Oklahoma, a bill relating to the disability compensation and allowance of certain veterans who are totally and permanently disabled as a result of tuberculosis. Pending in the Senate Committee on Finance.

Comment.—This bill provides that the amount of disability compensation or disability allowance payable to any veteran under existing law shall not be reduced if such veteran (1) has attained or hereafter attains the age of forty, and (2) has received for a total period of five years or more disability compensation or a disability allowance for total permanent disability resulting from tuberculosis.

Hospital Facilities.—H.R. 2567, introduced by Representative Voorhis, California, a bill to create a Temporary National Hospital Survey. Pending in the House Committee on Interstate and Foreign Commerce.

Comment.—This bill would establish a Temporary National Hospital Survey, hereafter referred to as the "Survey," to be composed of (1) two members of the Senate to be appointed by the President of the Senate, (2) two members of the House of Representatives, to be appointed by the Speaker, (3) one representative each from the Department of War, the Department of the Navy, the United States Public Health Service, and the Veterans' Administration, and (4) four additional members to be appointed by the President of the United States. A duty will be imposed on the Survey (a) to make a complete study with respect to the situation of hospitals and hospital beds now available or that can be made available for use of the members of the military forces; (b) to make a survey of all buildings of any kind or character which are or may be adapted for hospitalization, including hotels, spas, dude ranches,

health resorts, and national park establishments; and (c) to study the hospital and health problem as a whole both as to war and to the effect on civilian life of the various phases of this war. The Survey, it is contemplated, will transmit from time to time to the President and to both houses of Congress preliminary reports of the studies and investigations carried on by it, together with the recommendations. All authority conferred by this legislation on the Survey will terminate on the expiration of the Seventy-eighth Congress.

A House Resolution submitted by Representative Shafer, Michigan, H. Res. 202, pending in the House Committee on Rules, would authorize the House Committee on World War Veterans' Legislation to make a survey of existing veterans' and military hospital facilities and of the needs arising, and likely to arise, from the existing emergency for medical, tuberculosis and mental hospitals for veterans. The Committee would be directed to submit to the House a report covering a general program, with estimates of the cost, for the provision of hospital facilities likely to be needed.

Representative Bonner, North Carolina, has submitted H. Res. 220, also pending in the House Committee on Rules, proposing to authorize the House Committee on Invalid Pensions to conduct an investigation of the progress of the program of the Federal Board of Hospitalization with a view of determining whether such program is being carried forth efficiently and expeditiously toward meeting hospitalization problems arising and likely to arise for medical, tuberculosis and mental hospitalization for the wounded and sick veterans of the present war. The House Committee on Invalid Pensions would be required to report to the House of Representatives during the present Congress as the result of its studies with such recommendations for legislation, covering a general program, with estimates of the cost, for the provision of hospital facilities likely to be needed.

MULTIPLE VITAMIN COMPOUNDS

Multiple vitamin compounds have been added to the United States Pharmacopeia, *The Journal of the American Medical Association* reports in its May 1 issue. *The Journal* says:

"Shortly after the establishment of the therapeutic importance of vitamins, the United States Pharmacopeia undertook to provide standards and assay methods. At first the action of the Pharmacopeia was confined to individual vitamins; when the U. S. P. XII appeared in 1942 their employment in combinations similar to those found in foods was so thoroughly accepted by medical authorities that the Pharmacopeia found it advisable to provide recognition and standardization for an increasingly large number of these substances. The latest U. S. P. preparations of vitamins, the 'Hexavitamin' (six vitamins) Capsules and Tablets, the 'Triasyn B' (three synthetic B vitamins with liver) Capsules, Tablets and injections, have all been approved by authoritative medical groups and were added to the Pharmacopeia at the request of the Office of the Surgeon General of the Army for special use among troops. These forms of vitamin combinations are commonly sold as 'Multiple Vitamins' for the 'Hexavitamin type,' and as the 'B-Complex' for the 'Triasyn B type.' Neither synthetic pyridoxine hydrochloride nor calcium pantothenate was added to the 'B-Complex' type on the recommendation of the National Research Council and the Council on Pharmacy and Chemistry of the American Medical Association, since these compounds have not yet had sufficient clinical study to justify definite therapeutic claims. However, the new 'Liver B-Vitamins Concentrate' and 'Injection,' and 'Dried Yeast' and 'Dried Yeast Tablets' were introduced to furnish elements of the B complex when these were needed."

COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL 1943

(SOCIETIES WHICH HAVE PAID DUES FOR ALL
MEMBERS AND DATE PLACED ON HONOR ROLL)

HONOR ROLL

Perry County Medical Society, November 24, 1942.
Benton County Medical Society, November 27, 1942.
Chariton County Medical Society, November 28, 1942.
Camden County Medical Society, December 3, 1942.
Miller County Medical Society, December 3, 1942.
Barton County Medical Society, December 4, 1942.
Scott County Medical Society, December 8, 1942.
Montgomery County Medical Society, December 9, 1942.
Moniteau County Medical Society, December 14, 1942.
Cass County Medical Society, December 17, 1942.
Ste. Genevieve County Medical Society, December 21, 1942.
Howard County Medical Society, December 24, 1942.
Webster County Medical Society, December 29, 1942.
Carter-Shannon County Medical Society, January 7, 1943.
Clinton County Medical Society, January 15, 1943.
Macon County Medical Society, January 28, 1943.
Dallas-Hickory-Polk County Medical Society, February 3, 1943.
Holt County Medical Society, February 24, 1943.
Pulaski County Medical Society, February 26, 1943.
Newton County Medical Society, March 5, 1943.
Morgan County Medical Society, March 10, 1943.
Dent County Medical Society, April 2, 1943.
Pettis County Medical Society, April 9, 1943.

ASSOCIATE EDITORS: COUNCILORS OF THE
TEN COUNCILOR DISTRICTS

SIXTH COUNCILOR DISTRICT

R. W. KENNEDY, MARSHALL, COUNCILOR
Bates County Medical Society

The Bates County Medical Society met on April 8.
The following officers were elected: President, Dr.

C. A. Lusk, Sr., Butler; secretary, Dr. A. L. Hansen,
Appleton City; delegate, Dr. E. E. Robinson, Adrian.
A. L. HANSEN, M.D., *Secretary.*

EIGHTH COUNCILOR DISTRICT

WALLIS SMITH, SPRINGFIELD, COUNCILOR

Christian County Medical Society

The Christian County Medical Society met at Ozark
on April 12.

The following officers were elected: President, Dr.
R. R. Farthing, Ozark; vice president, Dr. J. H. Wade,
Ozark; secretary, Dr. C. A. Spears, Billings; delegate,
Dr. R. R. Farthing, Ozark.

C. A. SPEARS, M.D., *Secretary.*

NINTH COUNCILOR DISTRICT

E. C. BOHRER, WEST PLAINS, COUNCILOR

Laclede County Medical Society

The Laclede County Medical Society met at the Wal-
lace Memorial Hospital, Lebanon, on April 6.

Dr. L. F. Heimbürger, Springfield, presented a talk
on "Dermatology."

Dr. John M. Sartin, Springfield, discussed "Psychia-
try."

Those present were Drs. J. A. McComb, J. L. Benage,
H. A. Hamilton, J. L. Hope, H. S. Wolanczyk, R. E.
Harrell, Lebanon; C. E. Carlton, Stoutland; J. L. Lind-
say, Conway; Cyrus Mallette, Crocker; C. S. Miller,
Waynesville; J. R. Mott, Hartville; E. A. Oliver, Rich-
land.

J. A. McCOMB, M.D., *Secretary.*

South Central Counties Medical Society

The South Central Counties Medical Society met in
Mountain Grove on April 1.

A dinner at the Elliott Hotel preceded the business
session which was devoted to the discussion of general
medical problems.

Among those present at the meeting were Drs. H. G.
Frame, R. A. Ryan, A. C. Ames, R. W. Denney, Moun-
tain Grove; J. A. Fuson, Mansfield; L. M. Edens, Cabool;
L. M. Dillman, Houston; E. C. Bohrer, West Plains,
Councilor of the District.

L. M. DILLMAN, M.D., *Secretary.*

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

President, Mrs. Frank N. Haggard, San Antonio,
Texas.

President-Elect, Mrs. Eben J. Carey, Milwaukee,
Wisconsin.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

President, Mrs. R. C. Haynes, Marshall.

President-Elect, Mrs. J. B. McCubbin, Fulton.

Adviser, Dr. Herbert L. Mantz, Kansas City.

The Nineteenth Annual Meeting of the Woman's
Auxiliary to the Missouri State Medical Associa-
tion was held in St. Louis April 18 and 19, 1943,
with Mrs. Frank L. Davis, St. Louis, President,
presiding. A total of 114 members was registered
in attendance.

The report of the officers, chairmen and county

presidents showed that a high standard of achievement had been maintained under the capable leadership of Mrs. Davis, regardless of the fact that present conditions had necessitated many readjustments.

Auxiliary members and guests were indeed grateful to the St. Louis Auxiliary for their gracious hospitality, the buffet supper and entertainment especially arranged in their behalf.

Guest speakers of the convention were Dr. Morris Fishbein, Chicago; Dr. H. L. Kerr, Crane, President of the Missouri State Medical Association; and Mrs. Frank N. Haggard, San Antonio, President of the Woman's Auxiliary to the American Medical Association. The speaker from our State Auxiliary was Mrs. A. B. McGlothlan, State and National Past President.

At the close of the general meeting the incoming officers for the year were presented as follows: President, Mrs. R. C. Haynes, Marshall; President-Elect, Mrs. J. B. McCubbin, Fulton; First Vice President, Mrs. Harry M. Gilkey, Kansas City; Second Vice President, Mrs. Frank W. Gillham, Jefferson City; Third Vice President, Mrs. Frank Kerr, Monett; Fourth Vice President, Mrs. Roy E. Mason, St. Louis; Recording Secretary, Mrs. E. E. Wadlow, St. Joseph; Treasurer, Mrs. N. C. Cheek, Springfield, and Auditor, Mrs. W. E. Koppenbrink, Higginsville.

BOOK REVIEWS

PSYCHOSOMATIC MEDICINE. The Clinical Application of Psychopathology to General Medical Problems. By Edward Weiss, M.D., Professor of Clinical Medicine, Temple University Medical School, Philadelphia, and O. Spurgeon English, M.D., Professor of Psychiatry, Temple University Medical School, Philadelphia. Philadelphia: W. B. Saunders Company. 1943.

The term psychosomatic medicine is a recent development apparently aiming to cover instances in which emotional factors play an important part as a complication in organic disease or may even play a part in its development as in hypertension, goiter, asthma and heart diseases and also, conversely, ways in which such factors as endocrine disorders influence psychic reactions. The idea seems to be to extend the study of psychologic factors beyond the neurotic illnesses *per se*.

The present extended volume goes into these matters in considerable detail, one feature being an exposition of the special neurotic symptomatology as applied to systems and parts of the body like the stomach, the heart, the eye and the sexual organs. Diagnosis and treatment also are considered, the latter in a simplified form that any practitioner is supposed to be able to employ.

But the approach is basically psychoanalytic. Other conceptions are ruled out as inadequate philosophically and practically. Weir-Mitchell's rest cure, environmental changes and shock therapy are among these. Yet, these methods have been employed far more widely than psychoanalysis ever was and evidently have been found acceptable by numerous, competent specialists. One wonders how shock therapy can be called "inconsistent" when often after a week or two of treatment, the patient expresses himself as feeling well. To others he is apparently well, he returns to work and appears to continue to enjoy life in a normal fashion. It is little

wonder that psychiatry remains an enigma to the non-specialist when psychiatrists differ so widely in their attitudes.

For those who are willing to accept the authors' premises or are interested in their conceptions the work should provide a satisfactory source of study.

L. B. A.

HOW TO LEARN AND ADVANCE. By Samuel Kahn, M.D., Ph.D., Formerly on the Faculties of Georgetown and New York Universities; Chief Psychiatrist, U. S. Induction Boards for the States of New Jersey and Delaware; Author of *Sing Sing Criminals*, *Psychological and Neurological Definitions*, Etc. New York: The Alpha Press. 1942. Price \$2.00.

This is a small book which can be carried in a man's coat pocket. There are fifteen chapters and some are followed with quite a bibliography. The book has many valuable hints that might be used to advantage by anyone wishing to cultivate their ability to learn. This would include even college students. He lays a lot of stress upon many methods of note-taking in Chapter I. The use of a good library is lauded. There are many paragraphs bearing upon medical topics in several chapters. A few mistakes in the spelling of medical terms were discovered, such as "bitamins" where vitamins were probably intended, and "poliomyelitus" instead of poliomyelitis—all on page 29. In the ninth chapter, discussing health, he cites a great many quotations, including some proverbs. Most of them are excellent but a few may be questioned. The last few chapters bear definitely on how to study and memorize. There is a considerable amount of repetition in the book.

A.L.S.

DISEASES OF THE NOSE, THROAT AND EAR. Medical and Surgical. By William Lincoln Ballenger, M.D. F.A.C.S., Late Professor and Head of the Department of Otolaryngology, Rhinology and Laryngology, School of Medicine, University of Illinois, Chicago; and Howard Charles Ballenger, M.D., F.A.C.S., Associate Professor of Otolaryngology, Northwestern University School of Medicine, Chicago; Surgeon, Department of Otolaryngology, Evanston Hospital, Evanston, Illinois. Eighth Edition, Thoroughly Revised. Illustrated with 604 Engravings and 27 Plates. Philadelphia: Lea & Febiger. 1943. Price \$12.00.

This text, like the previous editions, is a standard in otolaryngology and is a credit to its predecessors. However, some rearrangement and rewriting of text has been done and the services of a few contributing authors have been utilized so that the new book is definitely a revision. The chapter on peroral endoscopy, covering direct laryngoscopy, bronchoscopy, esophagoscopy and gastroscopy, written in previous editions by Lewy, Gabriel Tucker and Chevalier L. Jackson is again revised by the same authors. Alfred Lewy revised his chapters on "Physiology and Functional Tests of the Labyrinth" and on "Inflammatory Diseases of the Labyrinth."

Some of the newer procedures which were added in this book are Brian T. King's transplantation of the omohyoid for bilateral paralysis of the recurrent laryngeal nerves, and J. D. Kelly's technic of arytenoidectomy for the same type of paralysis.

The book is divided into five parts: (1) The Nose and Accessory Sinuses; (2) The Pharynx and Fauces; (3) Diseases of the Larynx; (4) The Ear; (5) Bronchoscopy.

Each subject is covered so fully that the work serves as an excellent reference source for the trained specialist, and yet the material is so readable that the beginner may use it to perfect advantage.

Every practicing otolaryngologist and every resident or student in otolaryngology would do well to avail himself of this work.

H. H. B.

THE JOURNAL

OF THE

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PLANS FOR POSTWAR MEDICAL SERVICE

MORRIS FISHBEIN, M.D.

CHICAGO

I seem to be a perennial guest of the Missouri State Medical Association, returning regularly on Past President night. It has been a great pleasure to me today to greet many of the Past Presidents whom I have greeted before, most of whom I have met in visits to Missouri. I am particularly glad to know that there are so many country doctors who have been Presidents because the country doctors, the general practitioners, have been outstanding in medicine in the State of Missouri. They laid the foundations for good medical practice. I use that as an opening statement in relation to postwar planning. One of the important points to determine in postwar planning is the nature of the medical service that is to be rendered the postwar world. I am sure the general practitioner will render the best service possible in many areas. Today this country has more than forty-five thousand doctors with the armed forces. Before the year is out at least ten thousand more doctors must go from civilian life into the armed forces, many of them interns and residents and men combed from every other group that is not essential to civilian life. I have not the slightest doubt but that they will be available; and their service will be on a voluntary basis. The civilian community must be cared for fully if the war is to be won. On the other hand, the needs of the armed forces are first; the needs of the community and the civilian population must be second. With that point of view, the needs of the armed forces will not fail to be met no matter what is required.

In addition, there is the problem of what is going to happen to medical practice if, during the time that these men are in the armed forces, the medical profession fails to do what is expected of it. That answer is one which is puzzling all physi-

cians. Advertisements have been appearing in the newspapers and magazines throughout the nation that say: "What sort of world will he come back to? Will he come back to the old home that he had before? Will he come back to the job that he had before? Will he come back to the old American drugstore where he used to go for the various preparations for which anyone now goes to the American drugstore? Will he come back to the church he left behind, and will he read the same newspapers he read before? Will he come back to a world that is the same as the one he left when he set forth to fight for freedom?" Each one knows down in his heart that he wants a better place to come back to—a better world than the one for which he went forth to fight—each wants a better world even though he knows it will not be a perfect world. Americans knew they possessed the best in the world before they engaged in this war. They knew they were better off than their neighbors and still are. Americans are a privileged people. The medical service throughout the United States was not perfect before the war, but it was far better than existed in any other country in the world; I say that without fear of challenge. American medicine is today, and has been for some years, the best quality of medical service furnished to any nation in the world. I do not except Great Britain or France or any other nation. That does not mean that the quality of service or its distribution may not be bettered. The profession wants to retain from the past everything that it knows was good, everything that it knows was basic in making American doctors the best doctors in the world. In making American medicine the best medicine in the world one must remember it was founded on free choice. Free choice is basic in a democracy—free choice of the church with which one is affiliated; free choice of doctors, druggists, bankers and other professional men; free choice of the newspapers one reads; free choice of the candidates for whom one votes. These are basic in a democracy, as they are basic in medicine. If they depart from medicine, that is the first step of their departure from the American way of living. That is one reason, among others,

Editor of the *Journal of the American Medical Association*.
Presented at the Annual Banquet in Honor of Past Presidents at the 86th Annual Session of the Missouri State Medical Association, St. Louis, April 18, 1943.

why American doctors fight continuously for free choice of doctors and hospitals in American medicine. You know and I know that after the war ends there will be changes in medicine. We want to see, in the midst of these changes, the retention of all that is basic in American medical practice.

If the medical profession is going to maintain its high standards in medical care in the United States, and if it is going to extend more and more high-class medical care to more and more people, the first problem is medical education. Medical education in the United States has changed from that which it was back in 1905, from that which it was in 1872, to the high quality of medical education of today. It is one of the greatest triumphs of American medicine today that it has come into this second war period without deteriorating medical education. Keep that in mind because that is of fundamental importance. The curriculum has been increased; the total number of students being educated has been increased by 10 per cent; the number of medical courses has been increased and, through all this, medical education has maintained its standards. The total number of residents and qualified internships have been cut down but the quality of the residents is being maintained. If these standards can be maintained all through the war, schools will not, after the war, depart from the high standards of medical education.

Recently I visited the Russian Embassy to find out what had happened to medical education in Russia during the war period. At the time of the Revolution Russia had less than twelve medical schools and one physician to six or seven thousand people. Great numbers of their citizens had never seen a physician and never expected to see one at any time in their lives. From time to time attempts had been made in Russia to expand medical education more widely in order that more competent physicians might be available to practice among their people. I had read reports that came out of Russia to America as to the number of physicians available and the number at the front for the Russians have a good war medical service. Without such service, they could not have achieved the tremendous triumphs they have achieved with relatively slight losses of life compared with the loss among the men who are their enemies. I spoke recently with the Director of the Russian Medical Institute, Vladimir Lebedenko, head of the Russian Red Cross in the United States. He told me that they expect to graduate twenty-four thousand doctors from the nation's medical schools this year. I ventured to express some doubt. I said it was rather difficult to believe as there had been several reports last year that Russia graduated fifteen thousand doctors. It seemed almost impossible that they could graduate twenty-four thousand doctors this year. Of course, I had to have an interpreter because I do not speak Russian. He and the interpreter talked fluently for a long time; finally the interpreter

turned to me and said, "He says it is true." I said I did not know how they could do it, and he said, through the interpreter, "We have one thousand freshmen students in one school." Now I know that with one thousand freshmen students they cannot have the quality of basic education in anatomy, physiology and pathology that this country has.

Where will the postwar world get medical educators and teachers? They will not get them from the schools of Germany because the doctrine of medical education in Germany today is not scientific medical education. The medical education of Germany, which was once their pride, is gone. Now their courses last two years and they take the men directly from high school and they spend three months in military camps and three months in military training. The medical schools of Belgium and France and Poland have been destroyed. Some medical schools of Great Britain are continuing in high school buildings because the medical schools were destroyed with all their equipment during the bombing. The postwar world will be turning to the United States for medical educators. Without teachers one does not have a medical school. Just equipment, just numbers of students, just buildings, do not make medical schools. In the United States there are about one hundred eighty-six thousand doctors and there will be sixty thousand in the armed forces before the end of the war. Rear Admiral Ross McIntire said in Chicago a few days ago that he would not be surprised if one third of the doctors in the armed forces would remain in the armed forces for from five to ten years in order to carry on the necessary medical rehabilitation that the world is going to require. Of course, they will remain, if they do remain, voluntarily. I do not know of any authority that would hold them in the armed forces following the end of the war.

Upon the shoulders of the medical profession of the country who stayed at home is now placed the responsibility of leading the government into a proper consideration of the nature of the work these men do and the place in which they do it. This rehabilitation work will depend as much on the medical profession as on the political conferences that will be held around the peace tables. Following World War I, when the allied forces marched into Germany, the especial deficiency with which they had to deal was protein starvation. That seems hard to believe when last year one hundred and fifty million dollars worth of vitamins were produced. But the primary deficiency of the world then was not vitamin deficiency. France is suffering from nutritional defects now. A report from Belgium shows that last month fifty-seven children came into a clinic with an obvious nutritional defect, the protein starvation that was so characteristic of German children at the end of World War I. When protein starvation spreads through Europe, there must be nutritional con-

ferences held to determine the best means of providing the kind of food that will be needed for each one of these countries. What would be the use of shipping a vast amount of cereals and carbohydrates to a country that is suffering from protein starvation? But there will not be adequate nutritional conferences until the medical profession and the nutritional people sit in with the agriculturists to work this question out together. As near as I can determine from the list of those who plan to attend the first conference on nutrition, that phase has not been given any consideration.

Consider medical supplies! Following this war the plans will be made to meet the needs of all the world for medical supplies, many of which are now short. Even now, there are spreading throughout the world diseases which formerly had been the concern only of the nations in which they then appeared. In Germany, previous to this war, there was reported a total of fifteen cases of typhus fever. There have been printed statistics on typhus fever in Germany until last September, when something over nine thousand cases were reported. I do not think that typhus is a problem in the United States, but it will take all the science of medicine now known to make sure that typhus and malaria do not become major problems. Following this war there will be hundreds of thousands of American soldiers returning home with malaria. If this infection is not to be widespread throughout the country, it must be controlled, and this country must be able to control it when the soldiers come home. It requires special types of mosquito to carry these diseases. Following war there seems to be lowered resistance to influenza and pneumonia. Physicians do know something about controlling pneumonia, more than at the time of World War I, but knowledge of influenza is still in the experimental stage and has not been tested on the large scale that will be necessary if the widespread type of influenza that followed World War I is to be controlled. It is true that the new sulfa drugs may modify the character of influenza but before that question can be answered there must be a scientifically trained medical staff capable of doing the necessary research to carry protection for the American people.

There need be no fear of a rising demand for cultists, chiropractors, osteopaths and whatnot. That type of ignorance will never be able to establish itself in the postwar world.

Physicians know that medical supplies have been drained far beyond anything that was ever contemplated when this country entered this war two years ago, or when American medicine began thinking about this war, a year before that. Following the onset of World War I, this country was without arsphenamine and did not know how to manufacture it. The submarine *Deutschland* came here with its cargo of salvarsan. We found it impossible to duplicate it because German patents gave incomplete or wrong information. American chemists

and American industry found out how to make arsphenamine better than that which the Germans had made. Now, that experience has been duplicated with atabrine and American atabrine will serve the purpose as satisfactorily as any that was had before. That is a great triumph for American medicine. There are also the sulfa drugs upon which the world is depending. Other drugs are being developed. Out of this will come research on a large scale which will change the picture throughout the world. The dissemination of these drugs will be one of the problems of postwar planning.

Vast amounts of drugs were turned loose following World War I. As late as 1938, morphine, which was prepared for the Army, was sold by the illegal drug traffic in Naples. Catgut, which was infected with tetanus, left over from World War I, was sold as late as 1939. No one wants that to happen again, and so plans must be begun now.

Let me emphasize again the importance of keeping up this country's standards of medical practice. American standards and American ideals must be maintained in the effort to make over the world, to make a new world better than it is now. My connection with the American Medical Association dates back thirty years. I have read about the thirty years before that. The Association has undertaken constantly to extend more widely public health service to this nation. I have recently had sent to me from Great Britain a pamphlet concerning medical service in Great Britain. I think if many Americans could get this pamphlet and read it, they would be better enlightened concerning conditions over there. Figures are useless without giving an adequate basis of comparison. It is said that the death rate from tuberculosis had fallen from two hundred and forty in 1895 to something like seventy in Great Britain. But they do not put below that that in the City of Minneapolis last year the rate was thirty-one and in Nebraska it was thirty-three. That makes the British figures look different. They speak about infant mortality in Great Britain and quote figures to show that the rate is between sixty and seventy-five; in the city of Chicago it is twenty-nine.

The so-called Beveridge report from Great Britain and the report of the National Resources Planning Board in the United States are being discussed widely. The Beveridge report has been discussed in America almost as much as in Great Britain, while the report of the National Resources Planning Board did not seem to arouse much interest even in this country. The British call it the American Beveridge plan. The National Resources Planning Board finished their report about nine months before the Beveridge plan, but the Government printing office was so busy that they did not get around to having the report printed in toto. Some of the sections of the report dealing with medical security were published in Sep-

tember 1942, whereas the Beveridge report did not come out until February 1943. That is interesting in showing the time relationship between the two reports. About two weeks ago a Gallup poll was taken in the United States according to which a vast majority of Americans knew nothing about the report of the National Resources Planning Board and, more than that, they did not seem to want to know anything about it. What does that indicate? It indicates that the problem in Great Britain is quite different from that in this country. Over there their problem is freedom from want for many people, here there is not that problem. Americans were not much interested in the report of the National Resources Planning Board. However, this report is more encouraging to the medical profession than any other previous proposals. The report recognizes the leadership which must come from the medical profession and, in turn, the profession is aware of the government's interest in the people and the need for giving all equal health opportunities. The Beveridge report was received by the English physicians with qualms. They demanded that the report, if adopted, be placed into operation as a whole and not just the medical section thrown to the people as a sop. The medical profession in Great Britain wants it understood that the report shall not be adopted as a first step toward state medicine.

America still has a considerable number of areas in which the people do not have equal access to medical service. It is believed that hospital service ought to include four or five hospital beds for each one thousand people. There are some areas in the United States that have eight hospital beds for each one thousand of the population and tremendous areas that do not even have two hospital beds for each thousand of population. That means inequality of hospital access. It means that in postwar planning, when the necessary materials are available for civilian life, there will have to be many more hospitals built and workers trained to put in these hospitals. For this, plans must be begun now. We should not wait until the emergency is upon us. I do not feel inclined at any time to go along with those people who say, "Let us wait until we win the war, and then we will plan." If the medical profession waits until the war is won to begin to plan, there will be an immense amount of waste and a lot of propaganda for revolution in medical practice. If the necessary and proper planning is done beforehand, there will be scientific study to take care of America's needs.

If the administration, no matter what it may be at any given time, will accept leadership from medicine in medical affairs, it may be confident of all the cooperation that medicine can give when the problems of the postwar world are faced.

535 North Dearborn

THE VALUE OF STROPHANTIN IN CORONARY DISEASE

ROBERT UHLMANN, M.D.

KANSAS CITY, MO.

There is great variation in opinion on the relative merits and use of strophantin. Considered in many European countries a most valuable drug, it only infrequently is used in the United States.

The history of strophantin dates back to 1906 when Fraenkel¹ introduced its intravenous use for serious cardiac failure. His excellent experience led, at first with much hesitation, to its administration in coronary disease with outspoken insufficiency. Edens² observed its influence in 1931, not only on the decompensation, but also on the basic disease. He recommended strophantin principally in coronary disease, even without heart insufficiency, as in narrowing of the coronary arteries, coronary thrombosis and angina pectoris. Edens stressed that weakness of the heart muscle following coronary narrowing is the chief cause of the further deterioration in the coronary circulation. This vicious cycle can be broken only by strengthening the activity of the heart muscle, for the height of the aortic pressure after the closure of the semilunar valves determines the coronary inflow. Therefore, the problem was to find a medicine which steadies the systolic efficiency without much influence on the conductive system. Edens felt (and the experience of ten years in many European countries supports his theory) that strophantin comes fairly close to this purpose.

Some clinicians believe that the only advantage of strophantin over digitalis is the accurate dosage and the immediate effect. The chief action of strophantin is the strengthening of the systolic heart action. The lengthening of the diastole, which frequently is seen after digitalis, is absent. Strophantin has probably less effect on the vagus nerve than digitalis; one is able to give a small dosage which has very little effect on the conductive system but which will strengthen the systole of the heart. This may be due to the accurate dosage; but for all practical purposes, strophantin has less tendency than digitalis to cause conduction disturbances or extrasystoles; so much less that the presence of bradycardia or of a conductive disturbance is no principal contraindication against its use. It may be given with a slow pulse, with a prolonged P R interval and even in the presence of a block. Frequently, ventricular extrasystoles call for an especially cautious use of strophantin to avoid the occurrence of ventricular fibrillation. In such cases the dose of .15 mg. should not be exceeded; simultaneous use of quinidine is advisable. A special great advantage of strophantin, maybe its chief advantage over digitalis, is that a conductive disturbance after its use will not last long because strophantin has the least cumulative effect of all heart glycosides; most of the strophantin has disappeared from the heart muscle after six

hours. That explains why a small dosage (.15 mg.) can be given, if necessary, twice a day.

There are several strophantin preparations on the market (strophantin G, strophantin H, strophantin K). Strophantin K* is the least toxic in that the range between effective and toxic dosage is comparatively great. In patients with coronary insufficiency (coronary narrowing, coronary thrombosis, angina pectoris) .15 mg. should be used as an initial dose* in the first two days. This may be considered as safe even in sensitive hearts. Its increase to .2 mg. the next day and to .25 mg. the day afterward is, in most cases, possible and indicated. It may be advisable to omit the injection every fourth day. A dose larger than .3 mg. is, in most cases of coronary insufficiency, inexpedient, although some patients, especially the very sick ones, seem to get along better with larger doses (.35 mg.). But that should be the exception. The interval between two injections depends on the clinical picture and the effect of the injection. The daily injection of .2 mg. or .25 mg. is the most frequent procedure (omission every fourth day). If the treatment is continued for a long time, some increase of the dose seems frequently to be necessary. After some improvement, injections every second day are sufficient. In patients with nocturnal dyspnea, it is advisable to divide the total dosage of, for instance, .3 mg., into two injections.

If digitalis has been used, it should be stopped for twenty-four hours before the administration of strophantin, especially if the pulse shows any sign of digitalis effect. The amount of strophantin in the next twenty-four hours should not exceed .15 mg. The slower the injection is given, the better. If given plain, strophantin should be diluted again and again with the withdrawn blood. In the hospital, dilution with 10 cc. of 5 per cent glucose is advisable; even 50 cc. glucose may be used (with the drip method). A concentration of glucose higher than 10 per cent should not be given because arteries may respond with spasm to any concentrated solution. The combination with aminophyllin is used frequently although some patients fare better without it. Addition of salyrgan is possible, and may be given if the slower dehydration, which puts less strain on the heart (restriction of fluid and salt, aminophyllin, strophantin itself), will prove insufficient.

The use of strophantin is bound to involve some risk although it is much less than many physicians believe. It probably decreases the mortality of coronary patients; it undoubtedly shortens the duration of bed rest. The dangers involved are the possibility of an embolus, rupture of an aneurysm; occurrence of presternal pain as the result of an increased activity of the heart muscle and disturb-

ance of the conductive system may occur when too large a dosage, even comparatively too large, is used on a poor heart muscle. But these accidents are rare, especially to a marked degree. Signs of overdose may be appearance of oppression on the chest and of extrasystoles, prolongation of the P R interval and occurrence of bigeminal pulse. These symptoms call for decrease in the dosage, although it frequently is doubtful if these symptoms are the result of the medication or of the disease.

Although many authors recommend the use of strophantin even in cases of recent infarct, it seems to be safer not to use it during the first stormy days. But if the patient loses ground, even if a rise of the pulse rate suggests an advancing thrombosis, injection of strophantin may be a life-saving procedure. Frequently, just the poor condition of the heart muscle is a definite indication for small amounts of strophantin (daily injection of strophantin .15 mg. in 50 cc. glucose, drip method, without aminophyllin).

Edens recommended strophantin for angina pectoris saying that "this disease has lost much of its terror since it can be met by strophantin." He considers the weakness of the heart with concomitant insufficient coronary circulation as a decisive point for the etiology of angina pectoris. But there are other theoretical possibilities too which may support Eden's conception. Wenkebach always felt that angina pectoris is frequently the result of a distention of the base of the aorta; a "damming-up pain." He mentioned experiments in this connection: adrenalin dilates the coronary arteries in animals and probably in human beings, yet it causes angina pectoris. In contrast, pitressin causes an outspoken narrowing of the coronaries in dogs; but they do not show any symptoms of pain. On the basis of this theory, the usefulness of strophantin in angina pectoris would be very understandable. There is no doubt but that strophantin is helpful in many cases of angina pectoris. The dose should be small (.15 mg. or .2 mg.). The effect seems to be best in patients with sclerotic narrowing of the arteries; it is poorer when nervous spastic moments are predominant. It should be tried if the usual treatment, with the regulation of exercise, rest and vasodilating medicines, is of only limited success. Some patients with angina pectoris will experience an increase of spells after strophantin because the narrowing of the coronary arteries does not permit sufficient blood circulation for the increased activity of the heart. This forces discontinuance of this therapy. Some authors pointed out that this may happen, especially in cases of syphilitic etiology with its special localization.

Strophantin is surely not the only answer for such a many-sided disease as coronary insufficiency. One should always keep in mind that there is probably no disease in which overactivity will hurt more. The conservative management, which gives good results in many cases, should always be the basis of the treatment. The addition of strophantin,

* It is regrettable that the various strophantin K preparations are different in potency. The usual figures of the literature and of this paper are based on the activity of the official U.S.P. preparation or on other preparations of the same strength (for instance: Strophantin Kombe, Burroughs Wellcome & Co.). In contrast Abbott's Strophantin K is about twice as strong—that means .15 mg. of Abbott's preparation is equivalent to .3 mg. of the usual preparations.

however, with its steadying influence on the heart, is valuable because it attacks the disturbance from a different and important angle.

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CASE REPORTS OF THE BARNES HOSPITAL

CLINICAL AND POSTMORTEM RECORDS USED IN WEEKLY CLINICOPATHOLOGIC CONFERENCES AT BARNES HOSPITAL, ST. LOUIS

W. BARRY WOOD, JR., M.D., AND ROBERT A. MOORE, M.D., Editors

CASE 19

PRESENTATION OF CASE

A white married female, aged 49, was admitted to Barnes Hospital on November 5 and died November 11, 1942.

Chief Complaint.—Paralysis of extremities.

Family History.—Mother died at age 50 from heart disease. Father died at 72 from cancer of the liver. One brother had infantile paralysis at the age of 17.

Social History.—The patient had lived in Illinois all her life. She had an eighth grade education. She was a housewife, the mother of three children and lived in satisfactory financial circumstances.

Past History.—The only significant illnesses recorded were influenza in 1918 and tularemia in 1930. There had been episodes of abdominal pain for many years. These were at no time severe or incapacitating and the patient attributed them to gall stones.

Systemic History.—There had been a gain in weight of 30 pounds during the last three years of her life and apparently the patient was in the menopause.

Present Illness.—Thirteen days previous to admission the patient, who apparently had been in good health, developed a severe cough which persisted. This was followed three days later by a sore throat which remained for one week. There were no other signs of upper respiratory tract infection and no fever. Three days previous to admission she awakened in the morning with a sensation of numbness all over her body. A few hours later, while washing dishes, she noticed weakness in her hands in wringing out the dishcloth. She then became aware that her legs felt weak. She was able to walk a short distance to the doctor's office but by that evening weakness in all her extremities was marked. During the following two days (forty-eight hours after onset) there was almost complete paralysis of all four extremities with the exception of slight rotation of the extended left arm. The movements of the head and neck were not impaired.

Breathing and swallowing remained normal that day but on the morning of admission the patient experienced difficulty in expectorating from her cough which had been persistent. There was at that time no difficulty in respiration, eating, micturition or defecation.

Physical Examination.—Temperature was 100 F., pulse 80, respiration 18, blood pressure 127/78. The patient was an obese, alert woman who did not appear to be in distress. She coughed frequently but the cough was not sufficient to discharge mucus in her bronchi. She apparently was unable to move her extremities. The external ocular muscles were intact and the fundi not remarkable. The teeth were carious and the pharynx injected. Two small cervical nodes were palpable. Respirations were quiet and the diaphragm moved well. The lungs were clear to percussion but small moist rales and occasional coarse ronchi were heard throughout. The heart showed no abnormalities. There was some tenderness over the region of the gallbladder but the abdomen was otherwise normal. On neurologic examination the abnormal findings were confined to the four extremities where there was almost complete paralysis with the exception of slight motion in the wrists, fingers, ankles and toes. The forearms could be flexed slightly. The biceps, triceps, ankle and knee tendon reflexes were absent. There were no pathologic toe signs. The abdominal reflexes were present.

Laboratory Findings.—Blood count: red blood cells 4,820,000, hemoglobin 14.8 grams, white blood cells 10,400; differential count: basophils 2 per cent, segmented forms 62 per cent, lymphocytes 29 per cent. Urinalysis: specific gravity 1.038, albumin negative, sugar negative, microscopic negative. Stool was negative for blood. Kahn test was negative. Blood chemistry: nonprotein nitrogen 21 mg. per cent, chlorides 583 mg. per cent, total proteins 6.4 grams, albumin 3.9, globulin 2.5. Roentgenograms of the chest showed peribronchial infiltration of indeterminate nature and aortic lengthening.

Course in Hospital.—The patient was placed immediately on sulfadiazine which eventually reached a level of 12 mg. per cent in the blood. Because of her inability to discharge secretions from her bronchi, she was placed in a respirator. A rather large amount of mucoid secretion in the pharynx was obtained by continual aspiration. A lumbar puncture was performed shortly after admission. It was stated that the pressure was not sufficient to show on a manometer. The fluid obtained was clear, there were no cells, the Pandy test was negative, proteins were 22 mg. per cent, chlorides 781 mg. per cent, and sugar 77 mg. per cent. The Wassermann test was negative. Colloidal gold curve was 1111000000. A neurologic consultation revealed no new findings with the exception that it was established that there were no sensory changes. No diagnosis was established. Three days after admission the patient was noticeably cyanotic and the lungs were filled with bubbling rales. A bronchoscope was passed and the entire tracheobronchial

tree, as far as could be seen, was flooded with thin, clear mucus which was aspirated. The patient understood the manipulations poorly and the procedure was discontinued. A tracheotomy was deemed inadvisable because of the patient's condition. With large doses of atropine the mucus cleared up considerably. Four days after admission, voluntary motion of all extremities had ceased. Tendon reflexes remained absent and no pathologic toe signs had appeared. The gag reflex was then noted to be absent. Sphincter control was not impaired. The patient was taken out of the respirator temporarily but soon become cyanotic. She complained of feeling very weak and apparently was quite drowsy but could be aroused readily. On November 9, examination of the chest revealed marked dullness over the right lower and middle lobes. Cyanosis was increasing and on that day the temperature which had been moderately elevated fell to normal for a few hours, but rose again. There was increasing dullness to percussion over the right chest. The pulse which had been strong gradually began to fail, the blood pressure which had remained within normal limits slowly fell, cyanosis increased and the patient became unconscious. Excessive mucus returned to her lungs and in spite of artificial respiration gasping movements occurred and the patient died apparently in respiratory failure. The day before death the white blood cells were 13,650 with 20 "stab" and 55 segmented forms. There was albumin (3+) in the urine but microscopic examination was negative except for many sulfadiazine crystals.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: The significant features of this case may be summarized as follows: A woman who apparently always had been in good health, except for some abdominal disturbances for many years, developed a cough and sore throat about ten days before the onset of paralysis. The paralysis was very sudden and became nearly complete in all four extremities. There are many conditions to be considered that could cause a paralysis of this type. Dr. Rioch, is it permissible from an anatomic standpoint to separate clinical conditions into those which affect peripheral nerves and those which affect the ventral or anterior horns of the spinal cord?

DR. DAVID RIOCH: Some of the vitamin deficiencies affect the peripheral nerves almost exclusively, while certain infections and other vitamin deficiencies affect the cell body as well.

DR. ALEXANDER: Then one may consider vitamin deficiency as a possible agent in peripheral neuritis. What else may affect the peripheral nerves particularly?

DR. RIOCH: There may be an inflammation of the peripheral nerve—an interstitial neuritis. That would hardly come into the consideration in this case, however, because the disease is too acute for that condition.

DR. ALEXANDER: In this case do you feel that the lesion is essentially a peripheral neuritis?

DR. RIOCH: I do not think I can say. In most cases the cell body also is involved and I would expect the cell body in this case to show functional if not anatomic changes.

DR. ALEXANDER: In this case there were no sensory changes except a momentary numbness at the onset. On physical examination, this patient's sensory system seemed clear. Is that unusual in the various disorders that come into the category of clinical neuritis?

DR. RIOCH: It is unusual but it does occur.

DR. ALEXANDER: Dr. Jones, what is your impression?

DR. ANDREW JONES: This patient presented all of the symptoms characteristic of polyneuritis, not peripheral neuritis—but a specific condition known as infectious polyneuritis. There is also the acute febrile neuritis of Gordon Holmes. These cases begin with the patient feeling badly. Soon the patient becomes paralyzed—the paralysis beginning distally and ascending to the trunk and finally to the hands and rarely involving the muscles of respiration. There is also the condition that was described around 1918 by the English observers called acute infective polyneuritis, and later called in this country neuronitis. In these cases the onset may be sudden, as in this patient, or it may be delayed. Patients may have had an illness from one to six weeks before the onset—headache, backache, various pains. Suddenly there is a motor paralysis. In this type of case the symptomatology is nothing more than motor paralysis with absence of the deep reflexes and the cutaneous reflexes. There may or may not be sensory changes. Someone has suggested that this woman may have had a Gullain-Barre syndrome. In this syndrome the onset may be sudden or gradual, with little illness. The principal clinical symptom may be motor involvement, as in this case. As a rule, there is little sensory change.

In this patient postdiphtheritic paralysis must be considered, although the history and laboratory findings do not bear out such a diagnosis. Syphilitic polyneuritis is also a consideration. Then there is the syndrome of Landry's paralysis in which the pathologic picture shows very little because death occurs so quickly after the onset.

My impression was first that this was a case of polyneuritis or neuronitis. The main changes would be degeneration in the ganglion cells and in the posterior and anterior horn cells.

DR. ALEXANDER: Do you believe that what you described as acute toxic neuritis is the same as Landry's syndrome?

DR. JONES: Landry's syndrome is nothing but an acute ascending or descending condition with which the patient dies quickly. Another thing that presented itself in the differential diagnosis was infantile paralysis. There were many cases in the city at the time of this woman's death. But it was not seriously considered because the spinal fluid

findings did not fit and because this paralysis was not like that of poliomyelitis.

DR. ALEXANDER: Is Landry's paralysis the same as the acute toxic polyneuritis you describe? Did this woman have Landry's paralysis?

DR. JONES: No. On the basis of the infection in her throat, I consider that she had postinfectious neuritis, as described by Oppenheim, Gordon Holmes and others. You may call it neuronitis.

DR. ALEXANDER: If Landry's syndrome is defined as ascending or descending paralysis, associated only with motor disturbances, with intact sphincters, normal spinal fluid, sudden onset, terminating in respiratory death—she had that.

DR. JONES: No, Landry's paralysis is only acute ascending or descending paralysis. It begins distally and moves up quickly and there is complete sensory and motor paralysis.

DR. ALEXANDER: I believe there is some discussion as to whether Landry's paralysis and neuronitis are identical.

DR. RIOCH: Landry's paralysis was defined at a time when a number of these conditions were not separated one from another. Spinal fluid examinations were not made routinely. It contains no implications as to cause, nor, because death occurs so quickly, as to the pathologic picture. On the whole, the term Landry's paralysis is going out of use.

DR. ALEXANDER: Pathologic lesions are observed sometimes, are they not, Dr. Moore?

DR. ROBERT MOORE: Sometimes. The lesions vary from case to case.

DR. ALEXANDER: Then the term Landry's paralysis should be discarded?

DR. JONES: It is of no use. It may mean any one of a number of conditions.

DR. ALEXANDER: What about the question of poliomyelitis? The spinal fluid was normal, but I believe there have been cases, very rare of course, of the acute form of the disease occurring with a normal spinal fluid. In Fremont-Smith's book on the spinal fluid seven cases were reported.

DR. RIOCH: The clinical picture is against poliomyelitis. The woman did not have the apprehension nor the pain in the extremities. The distribution of the paralysis, although possible, is not characteristic. If she had poliomyelitis, she should have had a high protein in the spinal fluid at the time she died.

DR. ALEXANDER: Dr. Harford, have you any suggestions?

DR. CARL HARFORD: Any other suggestion I have to make would be rather remotely possible. It would be a very unusual example of the disease. There have been cases of rabies described which produced myelitis, in some of which there were no sensory changes detected, no history of dog bite or other bite and no elevation of cell count. In those cases, however, there was usually more indication of general infection such as chills and fever. It seems unlikely in this case.

DR. ALEXANDER: Is there anything else which would give a quadriplegia of this type?

DR. HARFORD: There is a disease called tick paralysis in which the patient develops flaccid paralysis of the extremities. The spinal fluid is normal and the diagnosis is made by finding the tick.

DR. ALEXANDER: And by removing it. That is, the paralysis subsides when the tick is removed, is that not so?

DR. HARFORD: Yes. It seems unlikely in this case.

DR. JONES: If all possibilities are to be considered, encephalomyelitis disseminatus must be discussed. This woman, however, had not been ill with measles nor had she been vaccinated, which conditions are the predisposing factors. However, encephalomyelitis disseminatus has been described as a clinical entity *per se*.

DR. ALEXANDER: There is a condition called porphyria, consisting of an abnormal porphyrin metabolism, which in acute cases leads to a quadriplegia somewhat like this, with abdominal pain in some instances. Dr. Moore, in some ways those cases resemble this one, and is it not true that when urine is passed it is not necessarily discolored unless exposed to light?

DR. CARL MOORE: That is right. It turns darker on exposure to light. But do not the acute cases as well as the chronic have photosensitivity?

DR. ALEXANDER: I do not believe so. Dr. Cecil Watson's article in the last number of the *Southern Medical Journal* brought this possibility to my mind. Dr. Rioch, do you agree that this patient probably had an acute toxic polyneuritis?

DR. RIOCH: Yes.

DR. ALEXANDER: Are there any other suggestions?

MR. EISENHAUER: What about the possibility of familial periodic paralysis?

DR. ALEXANDER: That is an interesting suggestion. Is not that a transient and temporary paralysis? Does it ever cause death?

MR. EISENHAUER: It does cause death.

DR. ALEXANDER: Tell us about it.

MR. EISENHAUER: I have here Wilson's "Neurology." Wilson quotes an article by Holtzapfel in the *Journal of the American Medical Association*, (45:1224, 1905). Six patients in one family reported in this article died of the disease. Familial periodic paralysis is supposed to have its onset before adolescence, but there is one case mentioned in which it came on at 60. The rest of the characteristics fit this case very well. The paralysis involves the legs, arms and trunk, and not the face muscles. The deep reflexes are lost but there is no disturbance of sensibility. The length of the attack is fairly short as a rule but may linger for several days. The familiar tendency is against this case being an example. In another place in this article it is stated that discomfort, shallow breathing and gathering of mucus in the bronchi accompany the disease.

DR. ALEXANDER: That is very instructive. I had never heard of a case of familial periodic paralysis in which death occurred.

MR. EISENHAUER: The familial tendency is pres-

ent in four fifths of the cases and out of seventeen reported in this article, six died.

DR. ALEXANDER: Are any pathologic lesions described?

MR. EISENHauer: There were no pathologic lesions.

DR. ALEXANDER: This patient had dullness over her lower lobe and no breath sounds could be heard when she was taken out of the respirator. Dr. Goldman, what do you make of that?

DR. ALFRED GOLDMAN: She probably had a respiratory paralysis and was unable to cough. Secretions piled up in the lungs and gave her a pneumonia with probable atelectasis and bronchial obstruction.

DR. ALEXANDER: The cough was interesting. It began even before the sore throat. There was a great deal of mucus when the bronchoscope was passed. This mucus caused great embarrassment in breathing. Dr. Jones, do you believe that that would be in keeping neurologically with this picture? The secretion of mucus apparently is related to the autonomic nervous system. Is there any connection between some disturbance of the autonomic nervous system and infectious polyneuritis?

DR. JONES: If one takes for granted that she had infectious polyneuritis, it can be explained that she could not get rid of the mucus because she could not cough it up.

DR. ALEXANDER: But she formed excessive amounts evidently due to vagal stimulation. Are there any other suggestions?

DR. RIOCH: With regard to the involvement of the autonomic nervous system, it is interesting that in the polyneuritides taken as a whole there is a tendency toward correlation between the size of the fiber and involvement. The sphincter control fibers are smaller fibers. In this case it was apparently only the largest fibers that were affected. With an irritation in the bronchi the autonomic nerves would be active and the patient might oversecrete because of the irritation and the inability to cough.

DR. ALEXANDER: It is agreed then this woman seems to have had acute toxic polyneuritis.

DR. ALEXANDER'S DIAGNOSIS

Acute toxic polyneuritis.

CLINICAL DIAGNOSIS

Acute anterior poliomyelitis.

? Acute multiple neuritis.

Atelectasis of right lower lobe of lung due to obstruction of bronchus.

ANATOMIC DIAGNOSIS

Polyradiculoneuritis (history of cold and sore throat for ten days, followed by weakness and complete paralysis below the neck for eight days and administration of sulfadiazine).

Inflammation of a nerve trunk of the cauda equina.

Degeneration of myelin in the roots of the spinal cord, slight.

Acute and chronic degeneration changes in the

ganglion cells of the ventral horn (found under many conditions and not diagnostic of any specific disease process).

Necrosis of the arteriolar walls involving the vessels of the spinal cord, cauda equina, heart, liver, spleen, kidneys, pancreas and adrenal glands.

Focal necrosis in liver.

Tenacious mucus in trachea and bronchi.

Atelectasis of lower lobe of left lung and upper and middle and part of lower lobe of right lung.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: We have had considerable difficulty in establishing a definite diagnosis on this patient. There are the changes in the nervous system usually found in polyradiculoneuritis (infectious neuritis). Necrotizing arteriolitis has not been described, although Sabin and his associates in Cincinnati observed phlebitis in one case. The foci of necrosis in the liver were also described by Sabin.

The term "polyradiculoneuritis" is the most precise, and does not imply an infectious origin, which has not been proved.

CASE 20

PRESENTATION OF CASE

First Hospital Admission.—A 58 year old married housewife entered Barnes Hospital for the first time on February 3 and was discharged March 13, 1943.

Chief Complaints.—Abdominal pain, cough, pain in chest and feverishness.

Family History.—Irrelevant.

Social History.—The patient was born in Illinois and had lived there all her life. She married when quite young and lived in a very strict German-Lutheran community. She had very little education, lived on a farm and worked extremely hard with little relaxation or diversion. She had twelve children, all delivered at home, and each of these pregnancies interrupted her farm work for only a short period. Of these children four are dead of causes unknown and two are in an insane asylum.

Past History.—Patient always enjoyed good health and mentioned no definite diseases in the past, although, because of language difficulties and impaired hearing, the history may not be entirely accurate.

Systemic History.—Bilateral deafness, almost complete, had been present for several years; all teeth were removed many years ago. No other abnormalities were recorded.

Present Illness.—There were two sets of symptoms. One set, referable to the abdomen, had been present for some fifteen years; the other referred to the chest and dated back only six or eight weeks.

For many years the patient had had severe, sharp, knife-like abdominal pain which always followed the same pattern. This pain was located below the level of the umbilicus, extended across the lower abdomen and usually occurred about two

hours after eating. Occasionally this pain would awaken her at night and last for about half an hour. These paroxysms would tend to occur every few days for a month or so and be followed by a free interval of several months. For a few months before admission pain had been more or less constant. Although the patient was constipated, there was never any change in the character of her stools; but on one occasion there is a vague history of blood having been present. Although slight nausea occasionally was noted, there was no vomiting. The patient was examined and treated at the Washington University Clinics and no organic disease could be found to account for the abdominal pain. Treatment with bromides and phenobarbital gave considerable relief and it was believed that the pain was functional in origin, due probably to emotional factors related to her home life. Several years ago, while under observation in the Clinics, the patient had had a complete loss of appetite which resulted in a weight loss of some 25 to 30 pounds. It was regained slowly and there had been no repetition of such an episode.

Late in December 1942, the patient developed a sore throat, general malaise and a cough productive of thick white sputum. This material was raised, however, only after a hard paroxysm and occasionally, after a very severe attack, the sputum was observed to be mixed with a brownish red material. After these attacks of coughing the patient developed a pain just beneath the sternum, extending up to the throat. The cough had persisted as had the pain. At times the patient had had shortness of breath following cough and had to sleep propped up in bed. One week before admission a physician made a diagnosis of pneumonia and declared that the patient had a bad heart and recommended hospitalization. Three days prior to admission the cough and pain had diminished considerably.

Physical Examination.—Temperature 39 C., pulse 100, respiration 20, blood pressure 96/78. The patient appeared to be much older than her stated years. She was in no apparent distress and could lie flat with comfort. There was no clubbing of the fingers. Hearing was impaired markedly bilaterally. The mouth was edentulous. The pharynx was injected slightly. The trachea was in the midline and there was no tug or pulsation. The thorax showed no abnormalities; the lungs appeared normal throughout. The heart showed no abnormalities. There was a moderate tenderness in both flanks just lateral to the external border of each rectus muscle at the level of the umbilicus. In the right upper quadrant the rounded edge of a mass of firm consistency could be felt on deep inspiration; it was tender. There was a retroversion of the uterus. Neurologic examination was negative except for somewhat exaggerated tendon reflexes throughout.

Laboratory Findings.—Blood count: red blood cells 3,850,000, hemoglobin 15.9 grams, white blood cells 12,400; differential count: juvenile cells 6 per cent, "stab" forms 30 per cent, segmented forms 34

per cent, lymphocytes 28 per cent, monocytes 4 per cent. Urinalysis: specific gravity 1.017, acid reaction, albumin negative, sugar negative, microscopic negative. Stool: considerable undigested fat, no blood, no ova or parasites. Kahn test was negative. Sputum: no acid fast bacilli on three consecutive examinations. Culture revealed pneumococci not virulent for white mouse. Blood agglutination test negative for typhoid, brucella and tularensis organisms. Roentgen ray examination of the chest showed haziness of the left chest from the fifth rib downward. This may have been the result of overlying soft tissue rather than actual pulmonary infiltration. The heart was enlarged slightly. Open film of the abdomen showed no abnormalities. Intravenous cholecystograms revealed faintness of the gallbladder shadow and on this basis a diagnosis of pathologic condition of the gallbladder was made. Gastrointestinal series was normal. Open film of the urinary tract with opaque catheters in place was indeterminate. Lying adjacent to the superior margin of the left kidney was a crescentic area of calcification which appeared to be outside the kidney and most probably in the spleen. Liver function test gave 25 per cent dye retention. Blood culture was negative. Electrocardiogram was diagnosed as myocardial damage of the coronary type. The T waves were inverted in leads 2 and 3 and CF-4. The S-T segment was slightly depressed in CF-4.

Course in Hospital.—During the patient's stay in the hospital she ran a fever, the temperature ranging from normal to 39 C. Search for an underlying infectious agent was unrevealing and urine cultures, stool cultures and blood cultures were repeatedly negative. A sternal puncture produced normal bone marrow. Cystoscopic examination showed no significant abnormal findings. A tuberculin test using 0.1 cc. of first strength tuberculin was positive in forty-eight hours. Duodenal aspiration produced slightly hazy bile with normal sediment. On one stool examination chilomastix cysts and trophozoites were found.

The patient was treated with sulfamerazine with no effect on the fever or the cough which persisted off and on throughout the patient's stay. She had no abdominal pain while in the hospital. She was discharged unimproved, to be followed in the clinic. Diagnosis: fever of unknown origin.

Second Hospital Admission.—The patient was readmitted to Barnes Hospital on April 6, 1943, and expired on that day. During the three weeks that the patient had been at home she continued to have frequent attacks of cough with the production of moderate amounts of sputum. She also suffered some pain in the upper abdomen described as a burning sensation but there was no nausea or vomiting. There had been no bowel movement for several days previous to hospital admission. For a week preceding admission the patient had eaten very little and had grown rapidly weaker. There had been a gradual diminution of urinary output and eventually almost complete suppression. On

the day of admission the patient suffered a chill that lasted almost one hour following which she became extremely short of breath.

Physical Examination.—Temperature was 35.6 C., pulse 132, respiration 44, blood pressure 102/70. The patient's complexion was described as yellowish, although there was no discoloration of the conjunctivae. The breath was acidotic, the tongue was coated and the throat dry. No abnormal physical signs were discerned in the lungs. The heart was slightly enlarged to the left, the rhythm was regular. There was tenderness in the right upper quadrant and the liver was palpable three centimeters below the right costal margin. The bladder was distended greatly and was felt to the umbilicus. There was a slight pitting edema of the ankles. The neurologic examination disclosed no abnormalities.

Shortly after admission the patient had an acute attack wherein there were rapid respirations and gaspings. She was sitting upright in bed moaning and rocking backward and forward (according to the family she had these attacks frequently). On examination the patient appeared to be in acute distress. The radial pulse was rapid and barely perceptible. The hands were cold and cyanotic. The heart was overacting with forceful sounds; the rhythm was regular. Other than rapid respirations no abnormalities were noted in the lungs. Within a few minutes the acute episode had subsided and the patient relaxed and seemed completely relieved. The respirations ceased. Emergency measures failed and the patient expired a few minutes later. No laboratory data were secured on this second admission.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: This patient's history is resubmitted for diagnosis. There are many symptoms but perhaps those of cough and fever were the most prominent and may be considered first. Presumably her thoracic symptoms had been insignificant until a few months before admission. At that time she had a sore throat and other indications of upper respiratory infection, and from then on her symptoms were continual. Such episodes certainly have been common enough this winter—upper respiratory tract infection with sinus involvement, postnasal discharge and paroxysmal cough lasting for weeks. The question arises as to whether the acute infection initiated the disease from which she died or whether it stimulated some dormant lesion. Dr. Goldman, do you believe her cough could be accounted for by a bronchitis with possibly some bronchiectasis?

DR. ALFRED GOLDMAN: Yes, I think it will have to be accounted for that way unless the roentgenograms showing nothing in the lungs were taken some time before her death. When were they taken?

DR. ALEXANDER: About a month before she died. Then, in the absence of any parenchymal lesion, you would feel that this was bronchial infection?

DR. GOLDMAN: Yes. Bronchitis or bronchiectasis.

DR. ALEXANDER: Is a cough reflex always initiated in the bronchi? May it come from pleural or pericardial irritation?

DR. GOLDMAN: Possibly.

DR. ALEXANDER: Do you feel that her fever was in keeping with the diagnosis of bronchitis or bronchiectasis? She had some sputum which did not grow anything pathognomonic. In such cases do patients run such a high fever for so many weeks?

DR. GOLDMAN: No. Not without changes in the lung.

DR. ALEXANDER: Then her fever would not entirely be in keeping with this type of infection.

DR. GOLDMAN: That is right.

DR. ALEXANDER: The leukocytosis in this case is somewhat impressive. Does it give evidence of an acute intense infection, Dr. Moore?

DR. CARL MOORE: It gives evidence of a fairly severe infection, not necessarily acute.

DR. ALEXANDER: Would it be in keeping with a bronchitis of some months' duration, with possible bronchiectasis?

DR. CARL MOORE: It would be in keeping with considerable bronchiectasis, but hardly with a minimal amount. I think this is a very severe shift to the left and presupposes the presence of a relatively severe infection.

DR. ALEXANDER: What else might be considered as a possible cause of a cough of this nature? Are there any other suggestions? I presume that when a patient coughs and has fever, the possibility of tuberculosis is always to be considered. This patient gave a positive tuberculin test to a very small dose of tuberculin. Dr. Harford, do you believe this definitely infiltrative reaction in a woman of 58 is significant of an existing infection? There were tubercle bacilli, without doubt. Is this fact relevant?

DR. CARL HARFORD: I think it has the significance of a positive tuberculin reaction. I do not think it tells anything about whether or not there was an infection.

DR. ALEXANDER: Dr. Goldman, do you think this might be tuberculosis?

DR. GOLDMAN: I do not think the tuberculin reaction is of any significance. There was apparently no evidence of tuberculosis in the lung.

DR. ALEXANDER: If it went on for this length of time, would you rule out tuberculosis, Dr. Moore?

DR. SHERWOOD MOORE: I never rule anything out. I do not like to say something is not there.

DR. ALEXANDER: Is there a lesion there?

DR. SHERWOOD MOORE: I think it is pleural thickening. It may be pulmonary.

DR. ALEXANDER: What else might give these symptoms?

DR. EDWARD MASSIE: What about the aspiration of a foreign body that permits roentgen rays to be transmitted through it? Is that possible?

DR. SHERWOOD MOORE: That is a very good idea. It very readily could give that reaction of aeration which you see. But when a foreign body

gets to the point of causing fever there is usually enough infection or destruction of the lung to leave no room for doubt.

DR. ALEXANDER: What else is to be considered?

DR. PAUL HAGEMAN: I saw this patient a number of times and was impressed with the fact that she had had an acute illness which pointed to the respiratory tract. It certainly sounded as though her local physician was correct in making a diagnosis of pneumonia. I felt that her troubles were above the diaphragm and were infectious in nature. I was impressed with one of these chest films. Along the left border of the heart there seems to be a double line, which nobody else seemed to think was of any significance. But I wondered whether she might not have had an accumulation of pus along the mediastinal pleura.

DR. SHERWOOD MOORE: I remember some discussion about that at the time. We thought it was a thickened bronchial branch, not quite coinciding with the outline of the cardiac shadow.

DR. ALEXANDER: Apparently this woman was too ill to be subjected to lipiodol studies and too ill for bronchoscopic examination. Dr. Goldman, do you entertain the possibility that this patient may have had an early cancer of the bronchus?

DR. GOLDMAN: Yes, but there is no objective evidence of this.

DR. ALEXANDER: There is the cough, which would be in keeping in a patient of this age. She might have had a carcinoma of one bronchus or one of the larger branches—not complete obstruction—that would give fever and cough.

DR. GOLDMAN: I do not think so, without some secondary infection and more evidence.

DR. ALEXANDER: She may have had secondary infection.

DR. GOLDMAN: Possibly atelectasis and secondary infection. I do not believe that a malignant lesion itself would give the fever.

DR. ALEXANDER: Dr. Taussig, have you any comment to make?

DR. ALBERT TAUSSIG: It is certainly possible for an infiltrative carcinoma of the lung to produce minimal roentgen ray changes.

DR. ALEXANDER: Is fever present?

DR. TAUSSIG: Fever is quite often seen in cases of carcinoma of the lung.

DR. ALEXANDER: Is a blood picture like this possible?

DR. TAUSSIG: Not without there being infection.

DR. ALEXANDER: From this discussion it appears that this patient may have had bronchitis and bronchiectasis. However, her fever and her sputum, which at the end of several months was not particularly copious, do not entirely fit in with this diagnosis. So the reason for her cough is not apparent, if conventional signs and symptoms are considered. Are there any other suggestions?

DR. MASSIE: Could it come from a cholecystitis?

DR. ALEXANDER: We might discuss that. Here is a patient who had a mass in her right upper

quadrant, and this mass was not identified specifically according to the history. Roentgenologically her gallbladder was interpreted as pathologically involved. On her last admission it is reported that her liver was felt 3 cm. below the right costal margin and that it was tender. Dr. Massie raises the question whether a cholecystitis might not have given rise to an irritative cough. Or what about an infection of the liver? Cholecystitis or multiple abscesses of the liver would certainly result in fever like this. Could her cough result from such lesions, Dr. Goldman?

DR. GOLDMAN: I do not think a cough productive of sputum would very likely result. There might be some cough.

DR. ALEXANDER: But it would not produce as much sputum. It would be a dry, hacking cough. We must be careful here. This patient might have had a cough as the result of one thing and fever as a result of something else. But the fever is not out of keeping with pyogenic or multiple abscesses of the liver or suppurative cholecystitis.

DR. EDWARD REINHARD: This patient did not have a very large amount of sputum. She brought up very little sputum.

DR. ALEXANDER: It appeared not to be an irritative lesion. This again would be in keeping with the fact that the cough was extrabronchial. Apparently she did not die because of the cough. But on her last admission she had that very acute attack which one might interpret as cardiac in origin. Dr. Massie, this patient had substernal pain; her heart was enlarged; she had electrocardiographic changes. Do you think that her heart was seriously compromised?

DR. MASSIE: I think that on her first admission it was not seriously compromised. Her substernal pain was always associated with paroxysms of coughing and the heart should not necessarily be incriminated. On her second admission, she died rather suddenly. We must consider the possibility of an acute myocardial infarction. Myocardial infarction frequently is observed during the course of a pneumonia but coughing, even though violent, does not precipitate cardiac infarction.

DR. ALEXANDER: What about the episode during the last admission? Does that seem to be a cardiac episode?

DR. MASSIE: With such a severe episode, how is it possible to have no abnormal physical signs in the lungs? She should have had more than basal rales. The liver was enlarged 3 cm. Aside from that there were no evidences of failure.

DR. ALEXANDER: I did not mean to imply failure. Could this be a coronary episode without failure?

DR. MASSIE: Most patients with myocardial infarction will have basal rales.

DR. ALEXANDER: Immediately? The time element was very short. She died within a half hour of the attack.

DR. MASSIE: I assume we cannot use that as a diagnostic criterion.

DR. ALEXANDER: What about silent infarct?

DR. MASSIE: Silent infarcts do occur, but one must have an electrocardiogram with the typical changes.

DR. ALEXANDER: Do you feel that the electrocardiograms on this patient do not show coronary damage?

DR. MASSIE: We have one electrocardiogram. That shows myocardial damage with definite coronary disease.

DR. ALEXANDER: How many plusses would you give this?

DR. MASSIE: Two to three plusses.

DR. REINHARD: Is it not true that myocardial infarction is often first seen following straining at stool?

DR. MASSIE: Perhaps Dr. John Smith might answer that question.

DR. SMITH: I do not think it is.

DR. ALEXANDER: Dr. Moore, are you willing to rule out anything in the mediastinum in these roentgen rays? Substernal pain whenever she coughed, an irritative process which we cannot identify in the lung or in the bronchi? It is suggested that the lesion may be in the liver or beneath the diaphragm. Is there any area that does not show in these films?

DR. SHERWOOD MOORE: These films are adequate to rule out any significant disease of the mediastinum.

DR. ALEXANDER: You feel that there is nothing in the mediastinum to account for these symptoms?

DR. SHERWOOD MOORE: Nothing more than a little bit of thickening of the pleura on the left side.

DR. ALEXANDER: This all seems to lead us nowhere. Are there any other suggestions?

DR. LLEWELLYN SALE: May I inject a rather bizarre idea into this discussion? The vegetative form of ameba was found once in her stool; she had brick-red sputum on some occasions; she had abdominal pain for a number of years, but no dysentery. There is reason to believe that she may have had suppuration. The possibility of a patient without dysentery but with amebiasis developing a liver abscess had occurred to me.

DR. REINHARD: Dr. Sale, it was Chilomastix that was found in the stool.

DR. SALE: I take it back.

DR. ALEXANDER: This may be an interesting suggestion anyway.

DR. HARFORD: It is said in the textbooks that Chilomastix itself will not produce lesions in the human being. However, it does occur very frequently in infection with Endamoeba histolytica, and also the infection is contracted in the same way as amebic infection; namely, by ingestion of cysts.

DR. ALEXANDER: Such an infection would suggest that the lesion would be essentially in the liver. No matter how we explore we can find nothing in the chest and little in the pleura, or mediastinum. Yet this patient coughed, she had marked substernal pain and had the episode just

before death. Possibly a lesion in her liver may have eroded through to the base of the lung but not have gone through it.

DR. POLLOCK: I think that a polyserositis, as in Pick's disease, might be considered. The substernal pain and tenderness in the abdomen would be in keeping with this.

DR. ALEXANDER: Would fever go with this?

DR. POLLOCK: Yes.

DR. ALEXANDER: I think we should record all possibilities. Dr. Massie, what do you think of this suggestion?

DR. MASSIE: This patient had paroxysms of abdominal pain which came and went. They apparently improved with sedation. Some sort of an intestinal obstruction must be considered. Two years ago there was an episode of complete anorexia and loss of weight. The cause of this I do not know.

DR. ALEXANDER: Would intestinal obstruction cause coughing?

DR. MASSIE: No. It would have to come from another disease.

DR. ALEXANDER: Are there other suggestions?

DR. JOHN SMITH: Several months earlier she had produced sputum which was mixed with a brownish substance. I wonder if we might know if the sputum showed any blood.

DR. SOBIN: It was always white and scant. She had a dry, hacking cough which was worse at night.

DR. ALEXANDER: Would a sinus cough do this, Dr. Walsh?

DR. THEODORE WALSH: I do not think so. Sinus coughs are bad at night, but they produce a good deal of sputum.

DR. TAUSSIG: Would you consider the remote possibility of periarteritis nodosa?

DR. ALEXANDER: With fever, abdominal pain, leukocytosis, suppression of urine—yes, indeed.

DR. HORNER: How about actinomycosis?

DR. ALEXANDER: Would not that give a lesion or purulent sputum?

DR. HORNER: I assume it was primary in the gastrointestinal tract.

DR. ALEXANDER: I gather from the consensus that the lesion is in the bronchial tree, that it is an irritative lesion, although a reservation is made that carcinoma may do this. This is an irritative cough, and possibly the origin is outside the thorax, but there may be some cardiac involvement. Does anyone wish to be more concise about this?

CLINICAL DIAGNOSIS

Fever of unknown origin.

Undiagnosed disease of the lung?

ANATOMIC DIAGNOSIS

Tuberculous pericarditis.

Tuberculosis of the superficial part of the myocardium.

Partial fibrous obliteration of the pericardial sac.

Fibrocaceous tuberculosis of the anterior mediastinal lymph nodes.

Miliary tubercles in liver and spleen.

Thrombi in the branches of the pulmonary arteries.

Infarcts of the lower lobes and left upper lobe of the lungs.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: Tuberculosis of the heart is a rare condition. Tuberculous pericarditis is the most common and is found in about 3 per cent of all autopsies on patients with active tuberculosis. It is believed generally that the disease is lymphogenous in origin and originates in two groups of lymph nodes in the mediastinum, the right superior tracheobronchial and the medial nodes about the left innominate vein.

The occlusion of branches of pulmonary arteries by emboli was extensive and was probably the immediate cause of death. The presence of infarcts indicates that there had been pulmonary embolism at some previous date.

DR. ALEXANDER: This is a lesson to us not to be led astray without exploring very thoroughly the possibility of tuberculosis when there is an unexplained fever. The tuberculin test was positive and that should have made us suspicious. The pain should have made us suspect a pericardial lesion. Her death, I daresay, was a typical death of pulmonary infarction. Acute episodes, shock, rapid pulse are often seen with pulmonary infarction. I should like to ask Dr. Moore whether this is the usual form of tuberculous pericarditis?

DR. ROBERT MOORE: This case is quite characteristic on the basis of autopsy findings. The pericardium is thickened and a serosanguinous fluid is located between the pericardial adhesions.

DR. ALEXANDER: Had these infarcts not occurred, she might have gone on for some time.

DR. SHERWOOD MOORE: It is well for students to know that a stratigraphic roentgenogram showing the thickening of the pericardium would have told the whole story.

DR. ALEXANDER: Did not the heart pulsate?

DR. REINHARD: It showed quite a good pulsation.

DR. ALEXANDER: That would be important.

DR. REINHARD: The heart sounds were loud. Is not that unusual?

DR. MASSIE: This patient did not have a pericardial effusion or typical constrictive pericarditis.

DR. WM. BARRY WOOD: Tuberculous pericarditis is extremely difficult to diagnose unless there is an effusion. Having learned of the pathologic diagnosis of this case shortly after the patient's death, I last night reviewed the hospital record to determine if possible whether or not the correct diagnosis could have been made with the clinical data at hand. I was somewhat surprised to find how many points in the record were in keeping with the diagnosis of pericarditis. I would like

to emphasize at the outset that these remarks are based entirely upon hindsight.

One of the patient's complaints was pain beneath the sternum, radiating to the neck. The patient also gave a history of attacks of dyspnea and orthopnea. There was considerable fever in the presence of a normal white count. Fever of that degree over a long period of time with a normal white count always should suggest tuberculosis. The blood pressure, 96/78, was not normal; the pulse pressure was low. The intern who examined this patient noted that the "heart sounds were distant." In addition there was the roentgenographic evidence that has been discussed. Dr. Sherwood Moore in his report stated that the heart was slightly enlarged. There was evidence of pleurisy, as interpreted by the Radiology Department. The electrocardiogram, as Dr. Massie pointed out, was definitely abnormal and was said to indicate "myocardial damage of coronary type." We can object to this interpretation because such changes in the electrocardiogram are not always caused by coronary disease. The changes in this case were not caused by coronary disease but by pericarditis and infiltration of the myocardium by the tuberculous lesion. Electrocardiographic changes of this type frequently are found in tuberculous pericarditis. Lastly the tuberculin test was positive at a low dilution. The patient, then, exhibited, at one time or another, practically all of the symptoms and signs of tuberculous pericarditis.

There were several diagnostic procedures which should have been carried out. A kymogram should have been obtained to determine the nature of the cardiac impulses. There was no mention made of cardiac pulsations in the fluoroscopic note. There was no record of the venous pressure. This patient had numerous attacks of dyspnea—the venous pressure therefore should have been measured. We did not take another electrocardiogram later on to see whether or not the state of the myocardium had changed during the patient's stay in the hospital.

The patient was in the hospital for five weeks and was sent out with the diagnosis of unexplained fever. None of us who saw her had any idea as to the origin of the fever. However, had we sat down and done just what we have done here—tabulated all of the positive findings—the correct diagnosis might have been more obvious.

REFRIGERATION FOR SKIN GRAFTING

Anesthesia for refrigeration of the areas from which skin is taken for grafting purposes is recommended "because it is simple, time saving and efficient," Lieutenant Harry E. Mock, Jr., Medical Corps, United States Army, declares in *The Journal of the American Medical Association* for June 26.

"Refrigeration anesthesia for skin grafting opens a new field for the use of reduced temperatures in surgery," Lieutenant Mock says. Two hours before operation, one or more uncovered ice bags are applied directly to the area from which the skin is to be taken."

SPECIAL ARTICLE

THE BARNARD FREE SKIN AND CANCER
HOSPITAL RESEARCH REPORT
FOR 1942

E. V. COWDRY

ST. LOUIS

This report relates to papers by the staff of the Barnard Free Skin and Cancer Hospital published in 1942. Unpublished researches will be described next year.

Precancerous lesions have been studied experimentally in animals and systematically in the clinic. In addition, they were referred to in some detail by Dr. James B. Murphy, of the Rockefeller Institute, in the Annual Barnard Hospital Lecture on "Trends in Cancer Research."

Methylcholanthrene, the most potent of chemical carcinogens, is related to the steroid hormones and may perhaps be produced in the body. It can be applied easily to the epidermis of mice in such a way that cancer always appears within a fairly definite time even after a single application (Cramer and Stowell). Consequently the epidermis, thus rendered hyperplastic, safely can be considered precancerous.

Heretofore there has been an element of uncertainty in chemical analysis of epidermis because it has not been possible properly to separate epidermis from the underlying dermis. Either inclusion of some dermis with the epidermis that is to be analyzed or failure to get all of the epidermis vitiated the results. This obstacle has been overcome by the introduction of a new method (Baumberger, Suntzeff and Cowdry). When excised whole skin is placed on a warm plate, with epidermis up, and is heated to 50 C. for one minute the entire epidermis can be stripped off like the skin from a scalded tomato. This epidermis is excellent material for analysis because it has not been exposed to any solution, evaporation from it has been slight and much of it is living, as can be demonstrated easily by measuring its oxygen consumption.

Epidermis, made hyperplastic by application of 0.6 per cent methylcholanthrene in benzene, has been found to differ radically both from normal epidermis and from epidermis made hyperplastic by benzene alone. In this precancerous hyperplastic epidermis the total lipid protein nitrogen ratio (Wicks and Suntzeff) and the iron nucleoprotein phosphorus ratio (Carruthers and Suntzeff) are reduced more than 50 per cent while the ascorbic acid content remains about the same. A new chemical equilibrium is established and maintained almost at a level until in small foci some of the epidermal cells become malignant. Papers on the sodium, calcium and magnesium contents of epidermis are now in course of publication which will provide a clearer view of the chemical properties of such precancerous tissue. Analysis of the

resulting cancers is more difficult, because, unlike epidermis, they are not avascular but contain blood which complicates the determinations.

In humans chronic ulcerative lesions of the mouth are often precursors of cancer. Keyes investigated 2,077 such cases and found evidence of malignancy in three out of every four. In his judgment "any ulcer of the mouth which fails to heal within a week or two is probably due to cancer." Along this line also is an interesting paper by Jorstad on "Diagnosis, Treatment and Prognosis of Carcinoma of Buccal Mucosa."

In his lecture, Dr. Murphy expressed the opinion that simple chronic irritation is not the principal factor in the development of cancer. One of the most important facts, which he singled out as having been established, is the existence in a particular tissue or organ of an inherited tendency or predisposition to cancer formation. When the hereditary endowment is the same, or practically so, as in identical twins, there is a remarkable similarity in the incidence of cancer. In more than 50 per cent of cases in which cancer has occurred in such persons it has affected both twins, has developed at about the same time, has been in the same organ and has been of the same histologic type.

Regardless of the nature of the inherited or predisposing factors, the results are, Dr. Murphy believes, the same; namely, "an unstable or poorly balanced cell system confined for the most part to an organ or tissue type." When this condition obtains, carcinogenic agents produce cancer easily; when it is absent they do so much less readily or not at all. These causative agents are of great variety: hydrocarbons, hormones, dyes, ultraviolet light, physical trauma and many others. Their only common property, as pointed out by Dr. Murphy, is that of cancer production in susceptible tissues. Perhaps the kick delivered to the relatively unstable cells is the same but a consequence more or less remote from the action of the carcinogen in which there are intermediate steps. In our experiments with epidermis the cells live individually, or in several generations, in the new chemical equilibrium imposed by the carcinogen before they break loose and exhibit malignant behavior.

Paletta and Max have found that the speed of cancer formation can be accelerated greatly by doses of female hormone (estradiol benzoate). It is not unlikely that other accelerating factors exist and retarding factors also. Consequently, in any consideration of lesions of the kind which in a high percentage of cases gives way to cancer, one must bear in mind tissue susceptibility, carcinogen and modifying factors of which age is certainly one.

In the diagnosis of cancer Helwig has evaluated critically the information to be obtained from examination of cells in body fluids. The pathogenesis of mixed salivary gland tumors has been clarified by Hempelmann and Womack. Complications in pregnancy resulting from ganglioneuroma have been pointed out by Foster, Berman and Compton.

Research on neurodermatitis, carried on for several years by Drs. Engman, Sr., Engman, Jr., MacCardle and their associates, has been concluded and the several papers will be bound together in a booklet. They show that this condition is characterized by a local deficiency of magnesium in the skin—the first reported deficiency of this kind in man.

Points in the treatment of lichen planus have been discussed by Conrad. Engman, Pfaff and Cooper have investigated erythema elevatum diutinum both histologically and bacteriologically. A detailed investigation of skin lesions in pellagra by Moore, Spies and Cooper is part of a cooperative attack on this disease at Barnard Hospital, Washington University School of Medicine, the College of Medicine of the University of Cincinnati and the Hillman Hospital, Birmingham, Alabama. Morris Moore has contributed a review of mycotic granulomata of North and South America helpful in connection with the request of the government that special attention be paid to tropical diseases. He also has presented the results of cultivation of the lepra bacillus and other mycobacteria in the chorio-allantoic membranes of chick embryos, completed with the aid of a grant from the Medical Research Committee of the National Tuberculosis Association.

Though attention in the Barnard Hospital is focused on cancer and skin diseases, several members of the staff have published articles on other subjects. Most of these, however, do have a definite bearing on the principal problems. Several improvements in chemical methods by Wicks and Carruthers enable us to investigate cancer more searchingly. The use of tertiary butyl alcohol by Stowell as a microtechnical agent is certainly timely and the same investigator's success in the photometric determination of thymonucleic acid is probably an entering wedge for the quantitative measurement of other microchemical reactions. A large number of contributions on operative surgery pave the way to more effective treatment of cancer sufferers. Several papers on the influence of hormones, vitamins, calcium distribution and ageing make for a better understanding of bodily adaptations in these and other diseases.

To review all the scientific contributions in 1942 by members of the staff would obviously consume too much space. It is clear from the list of papers at the end of this report that the spirit of research pervades the institution. "The opportunity presented by the Barnard Free Skin and Cancer Hospital today" has been forcibly and clearly presented by Dr. M. G. Seelig.

CHANGES IN FULL-TIME RESEARCH STAFF

During 1942 four staff members resigned. Dr. R. C. MacCardle, after service for three years as Research Associate, joined the Army with rank of Captain and is now on duty at Wright Field. Dr. P. E. Neilson, Research Fellow for one year, ac-

cepted appointment as assistant in anatomy at Washington University. Dr. R. E. Stowell, Research Fellow for two years and assistant to Dr. William Cramer, accepted appointment as instructor in pathology at Washington University. Mr. Lester Wicks, Research Fellow for three years, was appointed chemist in the Western Cartridge Company. Our best wishes go with these members of the scientific family of Barnard Hospital. It is the task of those remaining to carry on to the best of their ability.

INTEGRATION OF RESEARCH

We have completed the fifth year of monthly evening research conferences. These provide very helpful integration of our activities in the hospital with those of colleagues in the metropolitan area. The refreshments have been reduced materially but enthusiasm has not been dampened. During 1942 participation by visitors has been particularly gratifying. The hospital acknowledges with thanks stimulating discussions led by Drs. R. J. Crossen, of the Department of Obstetrics and Gynecology, H. L. Alexander, Paul Hageman and C. M. MacBryde, of the Department of Medicine, of Washington University School of Medicine; Drs. L. V. Ackerman and T. P. Eberhard of the State Cancer Hospital at Columbia, and Dr. Paul Wheeler, pathologist at City Hospital. It now can be said that these meetings constitute a well established contribution of Barnard Hospital to the St. Louis medical community.

Cooperation with Washington University has increased steadily. Dr. Stowell and Neilson, appointed to the University from our staff, have continued in their spare time investigations commenced in Barnard Hospital, part of the expenses of which are paid by the Hospital. Though sadly depleted, the staff of the Hospital has helped the Department of Anatomy of the University to discharge its increasing duties. Thus Dr. MacCardle (up to July 1) took full charge of a graduate course in anatomy for otolaryngologists; Dr. Simpson taught a special course in anatomy to physical therapy technicians; and Dr. Carruthers helped to instruct regular medical students in histology. In addition, Dr. Zola Cooper has played an important part in teaching in the Department of Pathology. Donors of special funds, without whose help our research would soon come to an end, look with favor upon individuals financed by them doing a little teaching. In fact, one of them makes the grant conditional on such teaching.

In 1938 the United States Public Health Service commenced a systematic survey of the clinical histories of cancer patients. This was centered in the Memorial Hospital (New York), the Charity Hospital (New Orleans), Hines Veteran Hospital (Chicago) and in the Barnard Hospital in all of which officers were assigned to duty. It is being continued in Hines Veteran Hospital and in Barnard Hospital. Miss B. Brady, in charge in Barnard

Hospital, has been most helpful. Her very detailed histories supplement ours. When, about the same time, the Service decided that the training of doctors engaged in the treatment of cancer must be improved, Barnard Hospital was among the first four leading cancer hospitals chosen by the government and since then the sending of cancer trainees to Barnard Hospital has been continued. Encouraging also have been other grants from the Public Health Service on recommendation of the National Advisory Cancer Council to help finance our main research in cancer. The Surgeon General of the Army has authorized a systematic study of the incidence of cancer in soldiers passing through the clearing house of Camp Leonard Wood by Captain Miles E. Foster who has been appointed Research Fellow in the Hospital to facilitate the work. A large number of young men are scrutinized and more than the expected number have some form of cancer. There are two base lines on which to compute the incidence. The first is the physical examination for entrance into the Army, the second the less hurried but more limited one of hospitalized individuals.

Cooperation with the C. F. Kettering Foundation at Antioch College has increased greatly. Members of the Foundation's staff have been and are making spectrographic determinations of materials and tissues used in our cancer studies. Without this help an important avenue of advance would be closed to us. There is a considerable amount of visiting between the Hospital and the Foundation. Some papers have been completed and will be published in 1943 under the authorship of members of both staffs. To say more would anticipate results of fluorescence studies by Drs. Cramer and Simpson which should come in our next annual report.

During 1942 the Jane Coffin Childs Medical Research Fund of Yale University discontinued aid given to our investigation of precancerous lesions; but the International Cancer Research Foundation came to our support by making a larger three year grant which is being used to finance chemical investigations by Dr. Carruthers.

Barnard Free Skin and Cancer Hospital.

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- As long as the supply permits, reprints of these papers will be sent free of charge on request to Dr. E. V. Cowdry.

ABSTRACTS AND DIGESTS

ENCEPHALITIS

Encephalitis Complicating Measles. Abraham M. Litvak; Irving J. Sands, and Harry Gibel. *Am. J. Dis. Child.* **65**:265 (February) 1943.

Measles is complicated by symptoms referable to the central nervous system in about 1 in from 1,000 to 1,500 cases.

Twenty-three cases of encephalitis complicating measles in 1,213 patients with measles hospitalized in the Kingston Avenue Hospital were observed from January to June 1941.

Thirty-three cases were collected from the records of the hospital from 1935 to January 1941, making a total of fifty-six cases.

Three types of onset of encephalitis have been observed: (1) convulsions or convulsions followed by coma, in 50 per cent of the cases; (2) listlessness, drowsiness, stupor and coma in 40 per cent of the cases; (3) delirium, irritability and excitement in 10 per cent of the cases.

There is no correlation between the severity of the attack of measles and the occurrence of encephalitis.

The height of the fever and the extent of the measles rash have no apparent bearing on this complication.

The average time of onset of encephalitis is between the fourth and the sixth day after the appearance of the rash. If cerebral symptoms occur sixteen days prior to the appearance of the rash or thirty days after its appearance, they are not due to encephalitis associated with measles.

There is no correlation between the severity of the onset of encephalitis and the prognosis for life or sequelae.

The longer the neurologic signs persist, the more frequent are the sequelae and the more unfavorable is the prognosis.

The spinal fluid findings are not pathognomonic of the disease. The diagnosis, therefore, cannot be based on observations of the spinal fluid alone.

There is no relation between the state of the spinal fluid and the severity of the attack of encephalitis or the outcome for the individual patient. Severe forms of encephalitis may be accompanied with normal spinal fluid. In the eight cases with fatal outcome the cell count was either normal or only slightly above normal, suggesting that a normal spinal fluid may indicate a more guarded prognosis.

The diagnosis is not difficult when neurologic signs make their appearance in the course of measles. When these appear in the prodromal period, the diagnosis is difficult. The differential diagnosis is not difficult when a history of a recent attack of measles is obtained.

Sudden rise in temperature, headaches, convulsions and lethargic stupor appearing in the course of measles are danger signals.

The cause of encephalitis complicating measles is still debated, and whether the histologic changes of the disease are due to inflammation or to toxic degeneration is still under discussion.

The prognosis of encephalitis complicating measles for life or sequelae should be guarded. In this series of fifty-six cases, eight patients died, a mortality rate of 14.3 per cent. In the present epidemic of measles, of the sixty patients with encephalitis nine died, a mortality rate of 15 per cent. On thirty-two patients, follow-up studies were carried out for from two months to seven years after discharge from the hospital and in twenty-two of them sequelae have been demonstrated (69 per cent).

There is no specific therapy for this disease. It is self limited and will run its course regardless of the type of therapy.

None of these patients had received convalescent measles serum, whole blood or placental extract in an attempt to prevent or modify the measles.

PARK J. WHITE, M.D.

CONTROL OF VENEREAL DISEASE

Report of the Advisory Committee on the Control of Venereal Diseases in Industry to the United States Public Health Service. Otis L. Anderson, Chairman.

In order to assemble current authoritative information and to formulate basic principles applicable to a program of venereal disease control in industry, the Surgeon General has appointed an Advisory Committee to the United States Public Health Service. This committee has outlined the objectives of such program as:

A. Medical and Public Health: (1) To find and refer for proper medical management all cases of venereal diseases among workers in industry. (2) To establish equitable policies for the employment of applicants and continuation of services of employees who have venereal diseases. (3) To coordinate the community and industrial venereal disease control programs.

B. Employee: (1) To improve the physical condition of employees. (2) To reduce the number of work days lost through illness or injury. (3) To provide job placement. (4) To prolong and increase the earning power of employees.

C. Employer: (1) To reduce compensation costs. (2) To lessen work interruptions and labor turnover. (3) To enhance production by increasing the efficiency of workers. (4) To minimize personnel problems.

In order to assure agreement on all phases of fundamental policy, the committee recommends that certain agencies be consulted in carrying out this program: the state labor department, industrial commission or similar department of state government, the appropriate committee of the state medical association, the association representing employers, the labor organizations, appropriate voluntary health and welfare associations.

Responsibility for the administration of the program should be shared by the industrial hygiene and venereal disease divisions of the state health department. The program should not be inaugurated without a complete educational program. The employee should be convinced that adequate treatment protects both his health and his ability to earn a living, and the employer that not all cases of venereal disease are infectious, through an educational program before venereal disease control measures are introduced.

In order that the control program may be effective, preemployment examinations should be mandatory for all workers. Laboratory tests for syphilis and gonorrhea should be made a part of the periodic, reemployment or "return from illness" physical examinations which are the policy of the industry. The interval between examinations should under no circumstances be more than three years.

It is of utmost importance that the results of the medical examination be considered confidential between the worker and the medical staff. Informa-

tion should be furnished to others only with the consent of the individual concerned or, failing this, on legal advice. The medical staff should make proper recommendations to the management as to the physical fitness of the employee for work. When the usual clinical record is kept in an open file, venereal disease forms should be filed in the medical departments for the use of the medical staff only.

There is no reason for denying employment to an applicant or for discharging an employee because an examination has revealed evidence of syphilis or gonorrhea, provided: (1) that the employee agrees to place himself under competent medical management; (2) that, if the disease is in the infectious stage, employment should be delayed or interrupted until such time as the noninfectious state is established through treatment and open lesions are healed; (3) that when syphilis exists in a latent stage, employment should not be delayed nor interrupted; (4) that employment may be deferred or denied when the individual is an industrial hazard; (5) that occupational readjustment of employees be made of individuals developing disabling manifestations; (6) that workers with syphilis in any of its stages be excluded from areas where there is exposure to chemicals which may produce toxic reactions, and those having cardiovascular syphilis or neurosyphilis should not be exposed to physiologic stresses; (7) that workers with gonorrhea should be allowed to work only under special medical observation during the administration of sulfonamide drugs.

The applicant or the employee whose examination reveals evidence of a venereal disease should be called to the industrial physician's office for a conference. He should be instructed as to the nature of the disease which he has in order that he may cooperate intelligently with the requirements of the program. He should be referred to a reputable source for medical attention and be furnished with a letter directed to his physician stating the results of the examination and what is expected of the employee as to regularity of treatment if he is to be employed. The industrial physician should receive a record of treatment at about monthly intervals. The names of individuals who have neglected or refused treatment should be turned over to the health department for appropriate action in bringing them back to treatment.

The plant physician making a tentative diagnosis of communicable syphilis or gonorrhea should without delay acquaint the appropriate health authority with the facts.

OTIS L. ANDERSON, M.D.

RHEUMATISM

Palindromic Rheumatism Among Allergic Persons. Warren T. Vaughan. *J. Allergy*. 14:256-264 (March) 1943.

One thousand consecutive adults (382 males, 618 females) with asthma, hay fever, urticaria, angio-

neurotic edema, migraine, gastrointestinal allergy or allergic dermatitis were investigated from the standpoints of arthritis and of allergy.

Two hundred six (64 males, 142 females) complained of either past or present rheumatic pains. One hundred forty-three of these had allergic symptoms attributable to food, such as urticaria, angioneurotic edema, gastrointestinal allergy, migraine and atopic dermatitis; forty-eight had only inhalant allergy and fifteen had contract dermatitis.

Twenty of these patients with rheumatic history established definitely that certain foods caused rheumatic exacerbations and seven were relieved with improvement in their allergic episode. Among these twenty-seven patients, the chief complaint was asthma in four, hay fever in seven, urticaria in seven, angioneurotic edema in four, gastrointestinal allergy in two, and one each with contact dermatitis, atopic dermatitis and migraine. All of these patients had more than one allergic symptom from food allergy, and eighteen, or two thirds, of this group had urticaria or angioneurotic edema, either or both. In six of these patients the examination of the joints was entirely negative. Four had intermittent hydrarthrosis alone and a fifth had hydrarthrosis with spindling of the finger joints; all these had hives and angioneurotic edema, one or both. Three had recurrent subacute rheumatoid arthritis, involving the fingers in one case, and finger and larger joints in two. Three had hypertrophic or osteoarthritis of the terminal finger joints and crepitation on passive motion of the knees. Eight had spindling of the fingers, with terminal nodes and crepitation of the knee joints; two of these had involvement of one or more other large joints and one had involvement of the large joints alone.

Skin tests indicated about one half of the causative foods; the remainder being found by the dietetic diary. Pork, milk, tomato, orange and pepper were the most frequent causative agents. Many other foods were incriminated in lesser number but did not include the conventional hearsay foods usually suspected. Inhalant allergy appeared to be the cause of both complaints in two of the seven patients who were relieved of their rheumatism, with improvement in their allergic episode.

Comment: Hench and Rosenberg¹ applied the term "palindromic rheumatism" to the syndrome of frequently recurring afebrile attacks of acute arthritis and peri-arthritis, sometimes para-arthritis, with pain, swelling, redness and disability, generally affecting only one, but sometimes more than one small or large joint of adults of either sex. The attacks appear suddenly, develop rapidly, last a few hours or days, then disappear completely and recur at short or long irregularly spaced intervals. Despite the transitory presence of an acute or subacute inflammatory polymorphonuclear exudate in articular tissues and cavity, there is little or no constitutional reaction or abnormality in laboratory

tests and no significant functional, pathologic or roentgenographic residues occur even after years of disease and scores of attacks. They thought that it was not upon an allergic basis. Nevertheless the reversibility of the pathology of the allergic reaction suggests hypersensitivity as a causal etiologic agent, but only a little less than half of these benefited cases conform to this description so that it is pertinent that allergic study helped 2.7 per cent of the series and 13.1 per cent of those with rheumatic history, irrespective of demonstrable joint changes and, especially, when associated with other manifestations of food allergy. It is also noteworthy that it was more likely that the causative foods were not the foods usually suspected by the layman. In the instances with abnormal joint findings, food or inhalant allergy cannot be the sole cause of the disability.

C. H. EYERMANN, M.D.

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SPINA BIFIDA AND CRANIUM BIFIDUM

Spina Bifida and Cranium Bifidum. Frank Ingraham and Henry Swoon. New England J. Med. 228: May 6, 1943.

A series of 546 infants and children seen at Children's Hospital in Boston with spina bifida or cranium bifidum are reviewed. An attempt is made to modify the attitudes of hopeless pessimism that exist in the medical profession today.

The incidence is equal in both sexes—16 per cent of the cases admitted spina bifida in the family. In slightly more than half of the series, spina bifida is associated with other congenital anomalies. The site of the lesion is most frequently in the lumbar region, with the cranial and lumbosacral region occupying an almost equal second place.

The majority of these patients usually are seen in the first year of life, and in these the usual complaint is the presence of a local mass or deformity. In forty-two patients the chief trouble was orthopedic, while fourteen complained initially of urinary difficulties.

All meningeal protrusions, whether or not associated with nerve tissue, whose osseous defect was in the skull (cranium bifidum) are grouped together as "encephalocele." The results obtained by operation for this group are very encouraging. Of the fifty-nine patients operated upon, 34 per cent are alive, well and entirely normal.

The optimum age for operation in those with spina bifida is between 12 and 18 months. This allows time for the development and recognition of disabilities and hydrocephalus, for the local growth of skin adequate to permit closure and for the child to develop in stature and nutrition into a better operative risk. If, however, the sac is broken but uninfected, or if it is so thin as to threaten rupture at any moment, and the patient appears to be other-

wise relatively normal, immediate operation is demanded to save his life.

The operative procedure is described in detail.

ROLAND M. KLEMME, M. D.

FOREIGN BODIES IN EAR

Foreign Bodies of External Canal, Middle Ear and Mastoid and Their Complications. Walter F. Mosher. *Arch. Otolaryng.* 36:5 (November) 1942.

Comprising an important percentage of every physician's practice are the complications resulting from accidental or avoidable trauma or infection. Forming no small part of this percentage are the accidents of children who have a natural predilection for stuffing foreign bodies into the ears, nose and throat. Foreign bodies in the external auditory canal sometimes are pushed back into the middle ear or the mastoid region by clumsy efforts on the part of relatives or other unqualified persons. Persistent attempts at removal even of a smooth foreign body from the ear of a frightened, struggling child too often results in avoidable trauma. The walls of the canal become swollen, thereby holding the foreign body even more securely in place, and aggravation, due to continued manipulation, results. Certain other foreign bodies, especially the organic ones, such as beans, when moistened by irrigation become many times their normal size. Rosenwasser suggested repeated instillations of absolute alcohol to produce drying and shrinkage before removal is attempted.

Insects, especially wood ticks, which are encountered frequently in certain localities, should be killed first by instilling a drop or two of chloroform into the external canal. One drop is usually sufficient to kill the insect and still not blister the drum. The dead invader may then be lifted out with forceps or removed by gentle irrigation, thus eliminating the hazard of injury to the tympanic membrane. Richards stated that he used a mixture of chloroform and oil. Hilton reported an instance in which an eraser from the end of a lead pencil was incompletely removed from the external auditory canal of a young boy. One year later the ear started to discharge and continued to do so for three years. He had attacks to severe pain and at times was irrational. A radical mastoidectomy was performed. Wedged into the annulus tympanicus was a large portion of the eraser. The patient recovered.

Unemphasized in the medical industrial literature but becoming an increasingly important industrial hazard among men who do acetylene welding is the entrance of slag into the mastoid region. My observations are based on the treatment of thirteen welders suffering from burns of the tympanic membrane due to slag. The minute pieces of hot metal and vitrified cinders fall into the upturned auditory canal, burn their way through the tympanic membrane and lodge in the mastoid bone. The resultant perforations vary from an area the

size of a pin point to the entire central portion of the drum. The slag may remain buried in the mastoid. Discharge will continue spasmodically until all of the foreign body has been expelled. One of my patients had a profuse discharge for fifteen months. Immediate proper treatment is necessary to preserve normal hearing. In the thirteen patients I treated, all but four of the perforations closed. These four did not heal, although the ears remained dry. In questionable cases the presence or absence of slag in the mastoid may be demonstrated by roentgenograms.

Too much emphasis cannot be placed on the importance of careful removal of foreign bodies from the external auditory canal. This is particularly true when one is dealing with frightened children. Forceful methods aggravate the traumatic conditions and increase the patient's apprehension. The better method and the better results are obtained by the simplest procedure.

J. L. MYERS, M. D.

ALLERGENIC PROPERTIES OF THE VEGETABLE GUMS

The Allergenic Properties of the Vegetable Gums. A Case of Asthma Due to Tragacanth. H. Harold Gelfand. *J. Allergy* 14:203-219 (March) 1943.

A woman, aged 26 years, developed vasomotor rhinitis and bronchial asthma after working in the office of a gum factory for periods of twelve and fifteen months respectively. Positive skin tests and positive passive transfer reactions were obtained to gum tragacanth and gum arabic, but not to karaya gum. Hyposensitization injections were unsuccessful in allowing her to continue her job.

It was not possible to examine the entire personnel, but 50 per cent of those examined had respiratory symptoms interpreted as allergic in nature and gave positive skin reactions to gum arabic and tragacanth, either or both, the greater number of reactions being to gum arabic; two gave moderate reactions to karaya gum as well.

Serologic studies, both in vitro and vivo, determined that gum tragacanth completely neutralized the reagins of gum arabic, but gum arabic failed to neutralize the reagins of gum tragacanth. It was also determined that the two gums had similar nitrogen contents. However, gum tragacanth contains either an antigen not present in gum arabic or a more potent atopic excitant because it elicits greater immediate skin reactions.

Gums most often considered identical and which frequently are confused with one another are bassora gum (caramania gum or hog gum); karaya gum (sterculia gum or Indian tragacanth); India gum (ghatti gum); gum arabic (acacia); and tragacanth gum. Gum arabic and gum tragacanth although differing in genus and species are members of the same botanical family—Leguminosae.

The various gums are substituted for one another. Their occurrence in commercial products

runs the gamut from adhesive pastes and artificial flowers, through laxatives, furniture polish, salad dressings, tooth pastes and varnish, to mention only a few sources of contact.

Comment: Reports of sensitivity to the commercial gums have appeared in the literature over the last ten years. Up to now they have dealt more with karaya gum, hairdressers being affected more often, in whom vasomotor rhinitis and bronchial asthma is the usual manifestation. It is also reported to have caused urticaria. Reports on sensitivity to acacia are less numerous; the clinical manifestations being acute constitutional reactions following intravenous injections, vasomotor rhinitis and bronchospasm, the latter occurring most often in printers who absorb it from the offset spray of which it is one of the ingredients. This reported case of sensitivity to tragacanth apparently is the first proved instance and calls attention to the vegetable gums as causative agents for allergic manifestations, particularly in those exposed to them in their occupation, such as cosmeticians, confectioners, printers and employees of gum plants.

C. H. EYERMANN, M.D.

SULFADIAZINE IN TREATMENT OF CHILDREN

Sulfadiazine: Review of Its Use in Treatment of Children. Authors' Conclusions. Kenneth J. Winters and Francis R. Janney. *Am. J. Dis. Child.* 65:702 (May) 1943.

High blood levels are reached and maintained easily with sulfadiazine because of relatively slow excretion; because of this, sulfadiazine may be given at greater intervals or in smaller doses.

Sulfadiazine given in doses of from $\frac{3}{4}$ to 1 grain per pound per twenty-four hours to children will produce an average blood level of from 7 to 10 mg. per 100 cc., which is adequate for usual infections.

Sulfadiazine is effective against most of the common bacteria producing specific infections, especially hemolytic streptococci, pneumococci, *Staph. aureus* hemolyticus, meningococci and *H. influenzae*.

Sulfadiazine passes readily into the spinal fluid, and spinal fluid levels usually can be expected to be two thirds or more of the blood level.

With high blood levels or poor intake of fluids, the most common reactions are crystals in the urine, red blood cells in the urine, leukopenia and neutropenia, which seem to clear when the administration of the drug is stopped.

Sulfadiazine spray for burns produces a satisfactory eschar and is effective in preventing secondary infection.

Patients receiving sulfadiazine should be observed with the same care that is advisable after administration of any other sulfonamide compound, and the urine and the blood count should be checked regularly with continued administration.

PARK J. WHITE, M.D.

ALLERGY TO INJECTABLE LIVER EXTRACTS

Allergy to Injectable Liver Extracts. Clinical and Immunological Observations. Samuel M. Feinberg, Howard L. Alt and Richard H. Young. *Ann. Int. Med.* 18:311, 1943.

Allergic reactions followed injections of liver extract in six patients receiving it for pernicious anemia, in one for anemia of undetermined origin and in one for acne. In all instances the reactions followed injections which previously had induced no reaction. The preceding number of injections varied from two to fifteen and the reactions occurred when there had been a long interval between series of injections and in none did reactions occur while they were receiving injections at intervals of one week or less. Either itching and flushing of the skin, or some form of urticaria, or angioneurotic edema occurred in all patients, with asthma occurring in about one half of the cases. When repeated reactions were produced, different allergic reactions occurred at different times in the same individual, with the lighter reactions occurring at first, the severer ones upon repetition of the injections. The approximate order of increasing severity of these manifestations was itching skin, particularly the palms of the hands or flushing of the face, nausea, slight faintness, generalized urticaria with angioneurotic edema and, finally, asthma.

All gave an immediate wheal reaction to percutaneous and intracutaneous testing with beef, pork and horse (all but one) injectable liver extracts. A large series of patients with other clinical allergy gave no cutaneous reactions with these extracts. All had no reaction to extracts of beef and hog muscle and no reactions were obtained in four to extracts of ascaris and tapeworm.

In four cases full therapeutic doses of liver extract could not be given without reaction after an interval of from several months to three and one half years following the initial injection. Hyposensitization did not increase the tolerance for liver extract. Three cases were able to resume injections; two of these had had the mildest constitutional reactions and small skin test reactions and the other gave a weaker skin reaction to an extract of beef liver and tolerated an extract made from this source.

Comment: Although hypersensitivity to liver extract appears to be rare and cannot be induced deliberately, this report makes one alert to the possibility of uncomfortable and occasionally alarming reactions from liver injections. When such injections begin to induce reactions at the site of injection, especially if there has been a longer interval than usual between injections, cutaneous testing with the liver extract may indicate the establishment of hypersensitivity, although a negative reaction is not as significant as a positive one. Sensitization having been proved, one should determine whether it be to the hormone itself or to the protein of the animal from which it is derived.

If the former, hyposensitization is indicated; if the latter, substitution by a liver extract made from another animal would be the indicated procedure. Immunologically, the reaction is of the order of serum allergy, the reaction resembling the immediate type of acquired reaction seen after the second injection of horse serum.

C. H. EYERMANN, M.D.

REPEATED ADMINISTRATION OF SULFONAMIDES

Evaluation of the Dangers of Repeated Administration of Sulfadiazine and Sulfathiazole in Children: Authors' Summary. Herbert W. Fink and James L. Wilson. *J. Pediat.* 22:513 (May) 1943.

1. One hundred and seventy-seven children were given a sulfonamide drug during two or more courses and had no reaction during the first course. Eighty-six were given sulfathiazole; three developed febrile reactions, none within the first forty-eight hours. Ninety-one were given sulfadiazine; four developed febrile reactions, only one within the first forty-eight hours.

2. In the total of seven cases (4 per cent) exhibiting reactions to these two drugs, fever appeared first on the second, third, fourth, fifth, seventh, fourteenth and fifteenth days respectively. It is suggested that these febrile responses were toxic reactions to the drug that might have occurred at any time and had no clear relation to previous drug therapy.

3. Two of the seven children with initial reactions were given both a second and a third course of the drug without reaction.

4. An "immediate" type of febrile reaction occurred during a second course of sulfonamides in three of five children who had had reactions during a first course.

5. Our studies show that "sensitization" to sulfathiazole or sulfadiazine is not common or frequent in children but that the occurrence of one reaction greatly increases the probability of future reactions.

6. Children who developed toxic symptoms during the first administration of the drug should be given the drug only with caution and close observation.

PARK J. WHITE, M.D.

EPIDEMIC KERATOCONJUNCTIVITIS

Epidemic Keratoconjunctivitis. M. L. Berliner. *Am. J. Ophth.* 26:50 (January) 1943.

While this subject has been mentioned in *THE JOURNAL* before, it is felt that it is of enough importance to justify more publicity. Being a highly infectious disease, physicians should be on the lookout for it and prepared to avoid passing it from one patient to another as apparently has been done in other places.

According to Berliner, epidemic keratoconjunctivitis appeared first in this country on the West Coast in 1941. The disease is characterized by sud-

den onset of pain, excessive lacrimation and edema. On the second or third day swelling of the preauricular node occurs. At first, secretion is minimal but later may become profuse and membranes may form, removal of which leaves raw bleeding points. In about half of the cases the second eye becomes involved after the first week. The acute symptoms begin to abate after about two weeks. A thickened and reddened mucosa may persist for from four to eight weeks. More than half of the patients complain of blurring of vision about the time the acute symptoms subside, due to the presence of small discrete grayish infiltrates occupying the pupillary area and located in the basal layer of the epithelial cells or in Bowman's zone.

Bacteriologic studies by separate workers uniformly have proved negative. The general feeling is that the condition is due to a virus infection.

The usual therapy employed for conjunctivitis has proved of little benefit. Sulfathiazole and sulfadiazine have proved of no value. Local irrigation with a weak solution of sodium bicarbonate and cold compresses give some relief to patients. After the acute symptoms subside, dionin has been used in treating the opacities.

J. F. HARDESTY, M. D.

Physicians should inform themselves concerning the origin and objectives of the proposed Wagner-Murray-Dingell bill for broadening the American social security program, *The Journal of the American Medical Association* for June 26 advises in an editorial discussing the measure. *The Journal* says:

"In its evolution the . . . bill stems from the National Health Conference of 1937, the Wagner bill which followed that conference, and the report of the National Resources Planning Board. Essentially in its medical aspects it is a compulsory sickness insurance bill and an attempt to translate the proposals of the Social Security Board into a technic of action. Inquiry of reliable sources in Washington indicates the probability that the actual designers and authors of the bill included I. S. Falk, director of the Bureau of Research and Statistics of the Social Security Board of the Federal Security Administration, Mr. Wilbur J. Cohen, technical adviser to the Social Security Board, and Senator Wagner's secretary, Mr. Philip Levy. . . . Inquiry also reveals that, as far as can be determined, representatives of the medical profession, either within or without the government, were not consulted in the development of the medical provisions. Evidence of this failure to consult the medical profession appears in the language of the proposed bill, since it speaks twice of a 'spell of sickness.' The word 'spell,' thus employed, does not appear in English dictionaries except as a colloquialism in Webster, and the term is seldom, if ever, used by any one educated in medicine. . . ."

"Speaking bluntly . . . the measure apparently attempts to avoid the numerous difficulties involved in developing a government controlled medical service by making the Surgeon General of the Public Health Service, whoever he might be, a virtual 'gauleiter' of American medicine. Indeed, it is doubtful if even Nazidom confers on its 'gauleiter' Conti the powers which this measure would confer on the Surgeon General of the U. S. Public Health Service. . . ."

"In offering the bill, its proponents emphasize that it provides for free choice of doctors; free choice of a doctor means of course, free choice of doctors willing to engage in this type of work. . . ."

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of the

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JULY, 1943

EDITORIALS

AMERICAN MEDICAL ASSOCIATION HOUSE OF DELEGATES

The regular Annual Session of the American Medical Association for 1943 was not held, but the House of Delegates met at the Palmer House, Chicago, on June 7, 8 and 9.

Dr. Elliott Proctor Joslin, Boston, Massachusetts, was selected to be the recipient of the Distinguished Service Award and this medal was presented to Dr. Joslin at the General Meeting on the evening of June 8. At this same meeting Dr. James E. Paullin, Atlanta, Georgia, was installed as President for the year 1943.

The officers of the Association and the members of the House of Delegates attended a dinner in the Ball Room of the Palmer House on June 7. Professor Charles E. Merriam, of the University of Chicago and member of the National Resources Planning Board, spoke on the report of that board.

The most significant action of the House of Delegates was the creation of the Council on Medical Service and Public Relations. It is to function with the assistance of those several Bureaus of the Association whose duties are related to the work of this Council, which has finally resulted from a number of resolutions presented to the House of Delegates at this meeting and at previous ones. One of the most important of these influential resolutions, if not actually the most important, was presented by Dr. Edward H. Skinner, Kansas City, the Delegate for the Section on Radiology. It is expected that the Council on Medical Service and Public Relations will be of immense benefit to both the medical profession and the public. There are many problems which are awaiting solution.

Each one of the four delegates who represented the Missouri State Medical Association was present and took active part in the proceedings. Two of them were appointed by Speaker H. H. Shoulders as members of important Reference Committees and served in that capacity. The three members of the Association who represented scientific sections, Dr. Edward H. Skinner, Kansas City; Dr. J. Archer

O'Reilly and Dr. O. P. J. Falk, St. Louis, were in attendance.

It is increasingly more evident that it is best to send representatives of experience to the House of Delegates. It requires a number of meetings to make enough friends among the veterans from other states so as to be able to represent one's own state properly.

Dr. Herman L. Kretschmer, Chicago, was chosen unanimously as President-Elect to serve in that capacity until installed as President in 1944. Dr. John W. Ames, Denver, was elected Vice President; Dr. Olin West, Chicago, was reelected Secretary for the twenty-first time, and Dr. Josiah J. Moore, Chicago, was elected Treasurer.

It is suggested that all members read the minutes of the House of Delegates as published in the *Journal of the American Medical Association*. Only in this manner is it possible to know and understand the vast amount of work which is performed in a few days by this very democratic body of conscientious representative physicians from all parts of the United States. Thus it also may be seen what a tremendous amount of work is done by the Board of Trustees, Councils and Bureaus throughout the entire year.

NEW LEADERSHIP IN MEDICINE

Under the title "New Leadership in Medicine" the *Globe-Democrat* of St. Louis commends the action of the House of Delegates of the American Medical Association in forming the Council on Medical Service and Public Relations. The editorial from the *Globe-Democrat* follows:

"The medical profession and the public rightfully look to the American Medical Association for leadership. In advancing the science of medicine and in maintaining its high ethical standards, the association's leadership has never been questioned. But in facing the broad economic problems of extending adequate medical care to the nation, the association's leaders have reluctantly held back.

"At its recent annual convention in Chicago, however, the association has at last asserted leadership in this field. A council on medical care has been created and charged with the responsibility of providing medical care for all economic groups.

"Socialized medicine has long been the bugaboo of the medical profession, even though the American Medical Association has recognized the importance of public health work and preventive medicine, which are, after all, a form of socialized medicine. The service the profession is now rendering in the armed forces is also a form of socialized medicine.

"There is good reason to accept the medical profession's verdict that socialized medicine as it has been practiced in Europe does not fit America's needs. In fact it is quite probable that no one plan can be devised which will provide proper medical care for a nation as large and with such varied social and economic factors as the United States.

A group plan, for example, which might serve a crowded urban district, would not fit a sparsely settled rural area.

"But the group hospital insurance plan, which has demonstrated its practicability in St. Louis and elsewhere, and the various medical group plans now in operation offer a starting point for the new council's planning. The important point for both the layman and the physician is that it is better for the leadership in such planning to come from the profession itself, rather than to be left to the government.

"The war, which has removed the barriers to many of our prewar convictions and prejudices, offers an excellent opportunity to project and carry out new ideas. In this war more than half the nation's physicians are in military service, and in the readjustment of civilian life after the war, it may be possible to offer physicians returning to civil practice worthwhile service with commensurate compensation, in communities that in the past have never had proper medical care."

LEGAL MEDICINE IN ST. LOUIS COUNTY

In 1926 the final report of the Missouri Association for Criminal Justice was published under the title "Missouri Crime Survey." Among many other recommendations were definite proposals to improve the methods and procedures for the collection of medical evidence in criminal cases. The most important of these was that expert pathologists be employed by the counties to investigate all violent deaths and to submit to the coroner and prosecuting attorney a scientific report on each. There can be little doubt but that law enforcement would be strengthened greatly by this move. The experiences in Boston, in New York and in Jersey City with the medical examiner system have amply proved the desirability of more active participation of the pathologist in the solution of crime.

Henry Miller, presiding judge of the St. Louis County Court, has recently announced that a major step in the accomplishment of these objectives has been made. The position of Pathologist to the St. Louis County Hospital has been created and provided for in the budget for 1943. Mr. Louis Bopp, Coroner of St. Louis County, has participated actively in the planning of the position and has recommended to the Court that this man be appointed Deputy Coroner. For the post a pathologist especially trained in the field of legal medicine has been secured. His services will be available to all of the law enforcement officers of St. Louis County.

The Department of Pathology of Washington University has offered to participate in the program by placing at the disposal of the pathologist all of its facilities. Thus, through a cooperative venture of the county and of the university, the proposals of sixteen years ago are to be accomplished. At one and the same time the ends of law enforcement and of scientific medicine will be attained.

NEWS NOTES

Dr. Earl C. Padgett, Kansas City, presented an address at the meeting of the American Surgical Association in Cincinnati on May 14.

Dr. A. S. Bristow, Princeton, has been appointed a member of the newly formed Group 1 of Selective Service Appeal Board No. 1.

Dr. E. A. Belden, Kansas City, was elected president of the Missouri Public Health Association at its annual meeting in Jefferson City, April 30 and May 1.

Dr. H. I. Spector, St. Louis, recently was elected to the Board of Directors of the National Tuberculosis Association and a member of the executive committee.

The surgery building of State Hospital No. 2 at St. Joseph has been named Panettiere Hospital in honor of Dr. A. H. Panettiere who was killed while in military service.

Dr. Carl F. Vohs, St. Louis, was one of the speakers on the program of the Medical Service Plans Council of America in Chicago on June 6. He spoke on "Farm Security Administration; Contracts With County Medical Society Participation."

Dr. Julius Jensen, St. Louis, was a guest of the Adams County (Illinois) Medical Society at Quincy, Illinois, on May 10, and spoke on "Recent Advances and Modern Conception Regarding Hypertension."

Dr. Edgar W. Johnson, Kansas City, was elected president of the Kansas City Eye, Ear, Nose and Throat Society at a meeting on May 20. Other officers elected are Drs. Luther J. Ferguson, St. Joseph, and John A. Billingsley, Kansas City, Kansas, vice presidents; W. Byron Black, Kansas City, treasurer, and W. E. Keith, Kansas City, secretary.

Dr. Evarts A. Graham, St. Louis, was selected to receive the Lister award for distinguished contributions to surgical science. The award is made every three years by the Lister Memorial Committee under the auspices of the Royal College of Surgeons of England, of which Dr. Graham has been elected an honorary fellow. Dr. Graham is the seventh person, the second American, to be named for the award.

The tenth extension of benefits for members of Group Hospital Service was announced recently. New benefits to be effective after July 1 include all drugs, sera, oxygen and carbon dioxide; provisions of all casts, minor braces, unpatented splints

and special dressings; elimination of restriction on quarantinable diseases and the provision of hospital or sanatoria care for pulmonary tuberculosis, mental, social, drug or alcoholic diseases.

DEATHS

Gossow, August A. F., M. D., St. Charles, a graduate of the Beaumont Hospital Medical School, 1892; member and former president of the St. Charles County Medical Society; Fellow of the American Medical Association; aged 75; died April 27.

Brown, Charles H., M. D., Fair Play, a graduate of St. Louis University School of Medicine, 1903; member and former president of the Dallas-Hickory-Polk County Medical Society.; aged 68; died April 28.

Brooks, Frederick C., M. D., St. Louis, a graduate of Beaumont Hospital Medical School, 1900; member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 74; died May 11.

INCIDENTALLY

FROM THE EXECUTIVE SECRETARY

The House of Delegates of the American Medical Association, meeting in Chicago June 7 to June 9, created a Council on Medical Service and Public Relations.—The Missouri State Medical Association is represented on this Council by Dr. James R. McVay, Kansas City.—It would seem that the basic machinery is now established for directing and coordinating the education of the public to the essential factors inherent in proper medical care.—The press has voiced its approval of the basic purposes of this Council.

On Sunday, June 6, at the Palmer House in Chicago, the Medical Service Plans Council of America held a meeting at which discussions of problems and procedures of medical service plans of state and county medical societies brought out the many difficulties involved in this type of medical care.—Information presented indicated that considerable headway has been made by medical societies in some states to develop medical plans on a fairly satisfactory basis.—It was evident that many problems are yet to be solved in this field.—Dr. Carl F. Vohs, Chairman of the Committee on Medical Economics of the Missouri State Medical Association, appeared on the program.

H. R. 2935, recently introduced in the United States House of Representatives providing appropriations for the Children's Bureau, contains a proviso that no part of any such appropriations shall be used to promulgate or carry out any instructions, orders or regulations which discriminate between persons licensed under state laws to practice obstetrics.—This would open the door for un-

qualified sectarian healers in many cases to participate in programs of the Children's Bureau.

After having a major operation in the form of an amendment performed upon it, House Bill No. 590 was ordered perfected and printed by vote of the House on June 1.—The bill was called up for third reading and final passage June 10.—Dr. Gray, Chairman of the House Public Health Committee, raised the point of order that a quorum was not present when the bill was voted from the committee.—Considerable discussion followed this action and without a House vote on the point of order, as raised by Dr. Gray, the bill was placed on the informal calendar by its author.

The Senate Appropriation Committee granted a hearing Friday, June 11, for an appropriation to the University of Missouri to place the last two years of medical education in Kansas City.—Members of the committee were given strong facts in support of the requested appropriation.—Physicians present at the hearing included Drs. A. W. McAlester, W. A. Bloom, James R. McVay, John S. Knight, W. Wallis Smith, A. S. Bristow, R. W. Kennedy, H. B. Stauffer.—The committee at the time took no official action on the appropriation request.

It is understood that Surgical Care, Inc., of Kansas City is now under way.—This is a prepaid surgical care plan operating on a contractual basis.—Surgical Care, Inc., was organized late in 1942 with the approval of the Jackson and Wyandotte county medical societies.—The management of the business of the corporation is charged to a board of directors consisting of fifteen members, all of whom are duly licensed physicians in the private practice of medicine and participating members of the corporation.

MISCELLANY

STATE LEGISLATION

House Bill No. 85 has been removed from the calendar and will receive no further consideration at this session.

House Bill No. 300, the Doctor Prefix Bill, is still in the Public Health Committee of the Senate.

Senate Bill No. 98, the Basic Science Bill, has not been acted on by the Public Health Committee of the Senate.

House Bill No. 319, the naturopathy bill, was killed on third reading by vote of the House on June 11.

House Bill No. 421, the Rheumatic Heart Disease Bill, has been voted out of committee in the Senate, recommending do pass.

Senate Bills Nos. 112 and 113, relating to narcotic drugs, are still in committee.

House Bill No. 590 was amended and ordered perfected on June 1. The amendment offered by Mr. Tucker of Greene County and which was adopted, reads as follows: "Amend House Bill No. 590, Pages 1 and 2, Section 1142, by striking all of Section 10042 as the same appears on pages 1 and 2, and by substituting in

lieu thereof a new section to read as follows: Section 10042. The 'Practice of Osteopathy' is deemed to be a system, method, art or science of treating diseases, injuries or defects of the human body as taught and practiced by the American School of Osteopathy of Kirksville, Missouri, and is hereby declared not to be the practice of medicine and surgery within the meaning of article 1 of chapter 59 and not subject to the provisions of said article. Provided, however, that nothing herein contained, except as expressly hereafter provided, shall enhance, enlarge or extend the general definition of osteopathy beyond the limits of the provisions of Section 10042, Chapter 62 as the same appears in Volume 2 of the Revised Statutes of Missouri, 1939 on page 2636. Provided further, that any person now licensed or who may hereafter be licensed to practice osteopathy in this state, and who is a graduate of a reputable college of osteopathy, which college at the time of his or her graduation offered a full course in medicine and surgery in addition to the regular course of osteopathy and which college had entrance requirements, facilities, instruction and training of a standard equivalent to the recognized medical colleges of this state, may, upon a finding by the State Board of Health that such person had met the basic requirements herein specified, be permitted to take the examination provided in Section 9983, Article 1, Chapter 59, Revised Statutes of Missouri, 1939, and may upon successfully passing said examination practice medicine and surgery as the same is defined in Article 1, Chapter 59 of the Revised Statutes of Missouri, 1939, as osteopathic physicians and surgeons."

House Bill No. 590 as amended is on the informal calendar for third reading and final passage.

Senate Bill No. 79, relating to the regulation and inspection of foods and drugs by the State Board of Health, passed the Senate and has been reported out as do pass by the Public Health Committee of the House.

Senate Bill No. 28, dealing with the reorganization of the Department of Vital Statistics of the State Board of Health passed the Senate and has been reported out as do pass by the Public Health Committee of the House.

Senate Bill No. 154, relating to malpractice under the Workmen's Compensation Act, is still in committee.

Senate Bill No. 165, introduced on May 20, is similar to Senate Bill No. 103 relating to state supervision under the State Insurance Department of group hospitalization and group plans for medical and surgical expenses. The bill is in committee.

House Bill No. 575, proposing to amend the criminal law concerning abortions by eliminating therefrom an existing proviso exempting instances in which an abortion or miscarriage was procured in order to preserve the life of the mother or unborn child when such action was necessary in the opinion of a duly licensed physician, was amended in the House so as to exempt the performance of an abortion when the same is necessary to preserve the life of the woman or that of an unborn child, or, if the person performing same is not a duly licensed physician, unless the said act has been advised by a duly licensed physician to be necessary for such a purpose.

ORGANIZATION ACTIVITIES

COUNCIL MINUTES

The Council of the Missouri State Medical Association met on May 30 at 10:00 a. m. at the Coronado Hotel, St. Louis, Dr. W. A. Bloom, Fayette, Chairman, presiding. Those present were Drs. H. B. Goodrich, Hannibal; W. A. Bloom, Fayette; R. W. Kennedy, Marshall; H. L. Mantz, Kansas

City; Wallis Smith, Springfield; Paul Baldwin, Kennett, Councilors; A. W. McAlester, Jr., Kansas City, President; R. L. Thompson, St. Louis, Secretary-Editor; C. E. Hyndman, St. Louis, Treasurer; Robert Mueller, St. Louis, President, St. Louis Medical Society; Joseph C. Peden, St. Louis, Chairman, Committee to Study Group Hospitalization; James R. McVay, Kansas City; Mr. Raymond McIntyre, St. Louis, Executive Secretary.

Dr. Peden gave the following report on Group Hospitalization:

"Pursuant to the appointment of a committee to study a plan for establishing group hospitalization in the Blue Cross Service open to the entire membership of the Missouri State Medical Association, and to submit a report to the Council, we have investigated this matter and after consultation with the officers of the Blue Cross Service in St. Louis and Kansas City, we wish to submit the following plan:

"Members of the Jackson and Clay county medical societies are to be enrolled as separate and distinct units through the Blue Cross Service office in Kansas City. All other members of the Association are to be enrolled in the plan through the St. Louis office of the Blue Cross Service. The following counties already have units operating: Audrain, Boone, Buchanan, Cole, Cooper, Greene, Marion, Pike, St. Louis City and St. Louis County.

"It is our recommendation that the counties just mentioned should continue their units as they are set up. All members residing in counties other than Jackson and Clay and the other counties mentioned shall be offered the plan through the office of the Missouri State Medical Association."

This was discussed by Drs. Mantz and Peden. It was decided that this service should be offered to members of the Association who are not now in a group, the plan to be placed on an annual basis. Assistants to physicians may be included but notifications of dues are to go only to the physicians. The Association is to make no charge for this service.

Dr. Goodrich reported concerning casualty insurance for physicians and stated that the policy carried under the Loyalty Group which the Jackson County Medical Society and the St. Louis County Medical Society members are carrying had several features which other policies did not have. It was decided by a vote of six to two to approve the policy and allow the insurance company to present it to members with the approval of the Council.

Dr. Goodrich reported that information had been requested on insurance on employees of the Association but that bids had not been presented as yet.

Dr. Mantz reported that considerable study had been given to the sectional meetings but that no definite plan could be presented at this meeting. This was discussed by Drs. McAlester, Smith, Mantz and Goodrich.

It was decided that the Committee on Study of

Cardiac Diseases should continue as a Committee instead of becoming a section. The Committee was commended for the work that it is doing.

Dr. Thompson called attention to the issue of the *St. Louis Post-Dispatch* of May 21 which carried an article which had appeared in the May issue of *THE JOURNAL*.

It was decided that the Committee on Public Policy and Public Relations should confer with editors of county bulletins concerning editorial policy on public relation issues and that the Chairman of the Committee should appoint a subcommittee for the purpose of working with editors of bulletins.

Mr. McIntyre presented information on legislative matters and it was decided that Mr. McIntyre and Mr. T. R. O'Brien should contact county medical societies during the summer months concerning public relation activities. Dr. Smith reported that this work had been begun in his district. Dr. Peden stated that the Community Health League was glad to have the approval of the Council for carrying on such work.

Dr. McVay presented information on the resolution adopted by the House of Delegates concerning establishing the last two years of medical training of the University of Missouri in Kansas City. He reported that this matter would be placed before the Senate Appropriation Committee as an amendment to House Bill No. 417 and that a hearing would be held shortly. He requested that members of the Council attend this hearing. This was discussed by Drs. Smith, Baldwin, Mueller, McVay, Mantz and McAlester. It was decided that the Council go on record as being in favor of the four year medical school being established in Kansas City and that it was the Council's opinion that this could be done with an appropriation of \$125,000. It was decided to hold a Council meeting in Jefferson City at the time of the hearing.

Dr. Mueller reported that 40 per cent of Missouri's quota in Procurement and Assignment had been obtained. He recommended that work be begun concerning the situation on medical service which will exist two or so years from now in rural Missouri.

Dr. Mueller, as President of the St. Louis Medical Society, was asked for recommendation for Councilor from the Third District to take the place of Dr. Curtis H. Lohr who resigned because of entrance into military service. Dr. Mueller asked permission to present the matter to the council of the St. Louis Medical Society.

Dr. Goodrich reported that Dr. H. L. Kerr, Crane, Chairman of the Committee on Rural Medicine, had begun work for that Committee and had asked cooperation of the Council with the Committee.

W. A. BLOOM, M.D., Chairman.

Health may be restored and life prolonged if the public is educated to seek early diagnosis and treatment of abnormalities of the urinary tract, Maurice Meltzer, M.D., New York, declares in a recent issue of *Hygeia*, *The Health Magazine*.

COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL 1943

(SOCIETIES WHICH HAVE PAID DUES FOR ALL MEMBERS AND DATE PLACED ON HONOR ROLL)

HONOR ROLL

- Perry County Medical Society, November 24, 1942.
- Benton County Medical Society, November 27, 1942.
- Chariton County Medical Society, November 28, 1942.
- Camden County Medical Society, December 3, 1942.
- Miller County Medical Society, December 3, 1942.
- Barton County Medical Society, December 4, 1942.
- Scott County Medical Society, December 8, 1942.
- Montgomery County Medical Society, December 9, 1942.
- Moniteau County Medical Society, December 14, 1942.
- Cass County Medical Society, December 17, 1942.
- Ste. Genevieve County Medical Society, December 21, 1942.
- Howard County Medical Society, December 24, 1942.
- Webster County Medical Society, December 29, 1942.
- Carter-Shannon County Medical Society, January 7, 1943.
- Clinton County Medical Society, January 15, 1943.
- Macon County Medical Society, January 28, 1943.
- Dallas-Hickory-Polk County Medical Society, February 3, 1943.
- Holt County Medical Society, February 24, 1943.
- Pulaski County Medical Society, February 26, 1943.
- Newton County Medical Society, March 5, 1943.
- Morgan County Medical Society, March 10, 1943.
- Dent County Medical Society, April 2, 1943.
- Pettis County Medical Society, April 9, 1943.
- Jasper County Medical Society, June 1, 1943.
- Jefferson County Medical Society, June 3, 1943.
- Platte County Medical Society, June 19, 1943.

MISSOURI STATE MEDICAL ASSOCIATION

Eighty-Sixth Annual Session

St. Louis

April 18, 19, 20, 1943

MINUTES OF THE HOUSE OF DELEGATES

Crystal Room, Jefferson Hotel

Sunday Session

The first meeting of the House of Delegates of the Eighty-sixth Annual Session of the Missouri State Medical Association was called to order at 2:00 p. m. in the Crystal Room, Jefferson Hotel, St. Louis, by Dr. H. L. Kerr, Crane, President.

A quorum was reported present.

Officers, Councilors and Delegates who were present during the Annual Session follow:

Officers

PresidentH. L. Kerr, Crane
President-ElectA. W. McAlester, Jr.,
Kansas City
Vice PresidentR. M. James, Joplin
Vice PresidentE. J. Schisler, St. Louis
TreasurerC. E. Hyndman, St. Louis
Secretary-EditorR. L. Thompson, St. Louis
Acting Executive
SecretaryRaymond McIntyre, St. Louis

Councilors

1st DistrictA. S. Bristow, Princeton
2nd DistrictH. B. Goodrich, Hannibal
3rd DistrictCurtis H. Lohr, St. Louis
4th DistrictC. E. Fallet, DeSoto
5th DistrictW. A. Bloom, Fayette
6th DistrictA. J. Campbell, Sedalia
7th DistrictH. L. Mantz, Kansas City
8th DistrictWallis Smith, Springfield
9th DistrictE. C. Bohrer, West Plains
10th DistrictE. J. Nienstedt, Sikeston

Delegates

AudrainFred Griffin, Mexico
Barry-Lawrence-StoneW. M. West, Monett
Barry-Lawrence-StoneR. D. Cowan, Aurora
BentonJ. A. Logan, Warsaw
BooneA. R. McComas, Sturgeon
BuchananJ. I. Byrne, St. Joseph
BuchananA. B. McGlothlin, St. Joseph
BuchananC. Wortley, St. Joseph
Caldwell-LivingstonR. Barney, Chillicothe
Caldwell-LivingstonD. M. Dowell, Chillicothe
CallawayR. N. Crews, Fulton
Cape GirardeauC. A. W. Zimmermann,
Cape Girardeau
Carter-ShannanT. W. Cotton, Van Buren
CassD. S. Long, Harrisonville
ColeJames Stewart, Jefferson City
CooperG. W. Blankenship, Boonville
DentF. E. Butler, Salem
DunklinE. L. Spence, Kennett
FranklinF. G. Mays, Washington
GreeneF. T. H'Doubler, Springfield
GreeneW. S. Sewell, Springfield
GreeneW. C. Cheek, Springfield
HenryG. S. Walker, Clinton
HowardM. P. Leech, Fayette
JacksonRalph E. Duncan, Kansas City
JacksonWilliam M. Korth, Kansas City
JacksonB. Landis Elliott, Kansas City
JacksonH. M. Gilkey, Kansas City
JacksonH. C. Lapp, Kansas City
JacksonO. S. Gilliland, Kansas City
JacksonHarry L. Jones, Kansas City
JacksonA. Graham Asher, Kansas City
JacksonM. B. Simpson, Kansas City

JacksonC. E. Virden, Kansas City
JacksonJames P. Henderson,
Kansas City
JacksonJohn S. Knight, Kansas City
JasperB. E. DeTar, Joplin
JasperR. M. James, Joplin
JeffersonJ. J. Commerford, Crystal City
JohnsonJohn A. Powers, Warrensburg
LacledeR. E. Harrell, Lebanon
LafayetteE. M. Moore, Sr., Higginsville
Lewis-Clark-ScotlandP. W. Jennings, Canton
Marion-RallsW. F. Francka, Hannibal
MillerW. L. Allee, Eldon
MontgomeryE. J. T. Andersen,
Montgomery City
MorganJ. L. Washburn, Versailles
NewtonD. Campbell, Neosho
Nodaway-Atchison-
Gentry-WorthB. F. Byland,
Burlington Junction
North-Central—
AdairA. B. Cramb, Kirksville
KnoxF. E. Luman, Edina
PemiscotJ. B. Luten, Caruthersville
Phelps-CrawfordR. E. Breuer, Newburg
Phelps-CrawfordA. H. Horne, Steeleville
PikeE. A. Cunningham, Louisiana
PulaskiA. J. Crider, Dixon
Randolph-MonroeF. L. McCormick, Moberly
St. CharlesB. L. Neubeiser, St. Charles
St. Francois-Iron-
Madison-Washington-
ReynoldsR. E. Harland, Ironton
St. Francois-Iron-
Madison-Washington
ReynoldsW. H. Barron, Fredericktown
St. Francois-Iron-
Madison-Washington
ReynoldsJ. L. Thurman, Potosi
St. Francois-Iron-
Madison-Washington-
ReynoldsA. F. Bugg, Ellington
Ste. GenevieveJ. A. Wilkens, St. Marys
St. LouisE. R. Brown, University City
St. LouisO. W. Koch, St. Louis
St. LouisR. A. Walther, Overland
St. LouisA. W. Westrup, Webster Groves
St. Louis CityE. V. Mastin, St. Louis
St. Louis CityE. Lee Dorsett, St. Louis
St. Louis CityJoseph Grindon, Jr., St. Louis
St. Louis CityJ. G. Probst, St. Louis
St. Louis CityR. E. Schlueter, St. Louis
St. Louis CityC. W. Lane, St. Louis
St. Louis CityLlewellyn Sale, St. Louis
St. Louis CityG. V. Stryker, St. Louis
St. Louis CityJ. C. Peden, St. Louis
St. Louis CityJ. E. Cook, St. Louis
St. Louis CityF. R. Bradley, St. Louis
St. Louis CityGrace S. Mountjoy, St. Louis
St. Louis CityM. J. Pulliam, St. Louis
St. Louis CityCarl F. Vohs, St. Louis
St. Louis CityE. R. Rice, St. Louis
St. Louis CityF. E. Woodruff, St. Louis
St. Louis CityRobert Mueller, St. Louis
SalineR. W. Kennedy, Marshall
ScottG. A. Sample, Chaffee
ShelbyA. M. Wood, Shelbyna
South Central—
HowellC. F. Callihan, Willow Springs
TexasLeslie Randall, Licking
DouglasM. C. Gentry, Ava
Vernon-CedarC. Braxton Davis, Nevada
WebsterC. R. Macdonnell, Marshfield

The reading of the minutes of the previous meeting was dispensed with and they were adopted as printed in THE JOURNAL.

Dr. W. F. Francka, Hannibal, was elected Speaker of the House, and Dr. John Green, St. Louis, was elected Vice Speaker.

The President, Dr. H. L. Kerr, Crane, read his message and recommendations as follow:

PRESIDENT'S MESSAGE AND RECOMMENDATIONS

I have no formal address and I have few recommendations to make.

It has occurred to me that it might be well to limit the number of consecutive years a Speaker of the House might serve. A man might serve two years, or five years or even for life. I recommend that the term be for from two to four years.

There are several things I might mention, but they are all covered in the reports of committees and I am sure that you are familiar with them.

The matter of employing an Executive Secretary should have been corrected long ago and it is almost imperative that it be done at this Session.

I would ask that all Delegates remain in the Session and work out the problems before the House as rapidly as you can and do the work thoroughly.

On motion duly seconded, the message was received.

The Speaker appointed the following reference committees:

Reference Committee on Amendments to Constitution and By-Laws

B. Landis Elliott, Kansas City, Chairman
Otto Koch, St. Louis
R. W. Kennedy, Marshall

Reference Committee on Resolutions

Frank R. Bradley, St. Louis, Chairman
H. M. Gilkey, Kansas City
B. E. DeTar, Joplin

Reference Committee on Miscellaneous Affairs

F. T. H'Doubler, Springfield
E. L. Spence, Kennett
C. B. Davis, Nevada

Reference Committee on Medical Education and Public Welfare

John Knight, Kansas City, Chairman
G. V. Stryker, St. Louis
M. Pinson Neal, Columbia

Dr. Curtis H. Lohr, St. Louis, Chairman of the General Committee on Arrangements, and Dr. Neil S. Moore, St. Louis, Chairman of the Local Committee on Arrangements, made announcements regarding entertainment during the Annual Session.

The report of the Acting Executive Secretary follows:

REPORT OF THE ACTING EXECUTIVE SECRETARY

During 1942 the medical profession of Missouri has been called upon for probably greater sacrifice than ever before. More than 600 members of the State Association have joined the armed services, the majority of this number having entered the service within the last year. You, who have been left at home to protect the civilian health front, have worked long, strenuous hours to fulfill the obligations of your profession. Your colleagues sacrificing their all in the armed forces have a right to expect that those physicians remaining in civilian practice use every legitimate means to preserve the independence and rights of the profession. The majority of members of the Missouri State Medical Association are aware of this obligation and are striving to accomplish these ends, and the headquarters office has attempted whenever possible or called upon to assist in any of these endeavors.

The heavy demands of the war effort on members of the Association have of necessity lessened Committee activities of the Association during 1942. Due consideration should be given those committees, officers and individual members who have, even under adverse conditions, given of their time and energy to carry on the activities of organized medicine in Missouri. The Committee reports as published represent the attempts of the Committees to justify the faith placed in them by the profession.

In 1941 there was a loss in total membership of one; in 1942 there was a loss of 19.

Status of Membership

Number of members, January 1, 1942.....	3,302
New members.....	104
Reinstated	6
Total	3,412
Dropped	42
Deceased	61
Transferred	26
Total January 1, 1943.....	3,283

Of this total 263 are Honor Members.

The nominating Committee must submit nominations for the following offices:

Three Vice Presidents to fill the vacancies created by the expirations of the terms of Drs. Robert M. James, Joplin; E. J. Schisler, St. Louis, and G. A. Lau, St. Joseph. Two delegates and corresponding alternates to the American Medical Association must be nominated to fill the vacancies created by the expiration of the terms of Dr. Robert E. Schlueter, St. Louis, alternate, Dr. C. W. Lane, St. Louis; and Dr. Rexford L. Diveley, Kansas City, alternate, Dr. C. A. W. Zimmermann, Cape Girardeau.

The terms (two years) of the Councilors of the even-numbered districts expire this year: Dr. H. B. Goodrich, Hannibal, Second District; C. E. Fallet, DeSoto, Fourth District; A. J. Campbell, Sedalia, Sixth District; Wallis Smith, Springfield, Eighth District; E. J. Nienstedt, Sikeston, Tenth District. Delegates from these districts are required by the Constitution to meet on the morning of the third day and elect the Councilor for their District. The election must be certified to the House of Delegates on a prescribed form which will be furnished.

During the year the President was called upon to appoint a Chairman of the Committee on Maternal Welfare and Infant Care, the vacancy created by the untimely death of Dr. Ralph R. Wilson, Kansas City. The President appointed Dr. E. Lee Dorsett, St. Louis.

The Annual Session will convene for two days' time this year, beginning with the first meeting of the House of Delegates on Sunday, April 18, at 2:00 p. m., and ending Tuesday noon. There will be no recessed session of the House and business usually conducted at the recessed session, with the exception of the report of Reference Committees, will be handled at the Sunday afternoon session. The second session of the House will be held at 9:00 a. m. Tuesday morning. The Council will meet Monday noon and Tuesday noon.

The Banquet in Honor of Past Presidents, usually held on Monday evening, will be held on Sunday evening in the Gold Room of the Jefferson Hotel with Dr. Morris Fishbein, Chicago, speaking on "Plans for Postwar Medical Service." Scientific work will be presented on Monday and an excellent program in the form of round table discussions has been prepared by the Committee on Scientific Work. The Committee on Maternal Welfare and Infant Care will hold its annual luncheon meeting Monday noon.

Forty booths have been sold to commercial exhibitors. The Committee on Scientific Work believes that this opportunity afforded physicians to obtain information on newer products and apparatus is a valuable part of the Session. Furthermore, the commercial exhibits aid in

defraying the expenses of the Annual Session and due courtesies and appreciation to these exhibitors will prompt them to exhibit at future meetings. Many of the exhibitors are regular advertisers in *THE JOURNAL*. Through their cooperation as well as that of other firms a substantial increase in advertising for *THE JOURNAL* has been secured for 1943. This additional income is very essential at the present time. Since November 7, 1942, the headquarters office has operated with one less employee than during the preceding twelve months. The efficiency of the office has been maintained with a saving to the Association of one full stenographic salary.

During the fall and winter months the headquarters office has been represented at the following component medical society meetings: Jackson, Clinton, Cape Girardeau, Scott, Saline, Cass, Dallas-Hickory-Polk, Adair-Schuyler-Knox-Sullivan-Putnam, St. Francois-Iron-Madison-Washington-Reynolds, Lewis-Clark-Scotland, Ste. Genevieve, St. Louis, Howell-Oregon-Texas-Wright-Douglas, Platte, Nodaway-Atchison-Gentry-Worth, Marion-Ralls, Buchanan, Laclede, Lafayette and Sixth and Eighth Councilor District meetings.

The Association was also represented at the following meetings in Chicago: Conference of Secretaries and Editors of Constituent State Medical Associations, Congress on Industrial Health, Conference on Medical Education and Licensure.

Visits were made to the Ohio and Indiana State Medical Association headquarters to secure information concerning their activities.

The Acting Executive Secretary has spent considerable time in Jefferson City in order to be informed of all activities concerning public health legislation.

There are seven candidates for Affiliate Fellowship in the American Medical Association: Drs. Frank G. Nifong, Columbia; John C. Morfit, St. Louis; Frank Herbst, Omar W. Pinkston, Bertram A. Poorman, Richard L. Sutton and Henry E. Thomason, Kansas City.

At this time the high standards of medical practice and medical education are threatened by cultist sponsored legislation. Much emphasis is being placed on the extension of social security involving compulsory Federal health insurance and hospitalization. The solution to all of these problems must rest in the hands of an active, progressive, well organized medical profession. What the medical profession of America does during this emergency is going to determine the opinion that the public has of medicine, and what happens to medicine after the war is over will depend on what the American public thinks of medicine, and this will affect those in and out of service.

RAYMOND MCINTYRE.

On motion, duly seconded, the report was accepted.

The report of the Treasurer, Dr. C. E. Hyndman, St. Louis, follows:

REPORT OF THE TREASURER

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1 to March 31, 1943

Particulars	Amount
Cash Balance December 31, 1942.....	\$18,635.12

Receipts

Members' dues and <i>JOURNAL</i>		
Subscriptions.....	\$12,676.00	
Annual Session Exhibit Space..	791.40	
<i>JOURNAL</i> Subscriptions—		
Nonmembers.....	7.50	
<i>JOURNAL</i> Advertising Space....	2,250.31	
Rental—Subtenant.....	93.34	15,818.55
Total Cash to Be Accounted For.....		\$34,453.67

Disbursements

Officers' Salaries	\$ 1,732.18
Office Salaries	1,399.50
Office Rent and Light	415.60
Postage	201.55
Stationery, Printing and	
Office Supplies	104.76
Telephone and Telegraph	249.25
Printing <i>THE JOURNAL</i>	1,875.06
Express	18.28
Insurance	3.73
Meetings	\$538.79:
Annual Session	\$ 26.00
Woman's Auxiliary ...	50.00
Committees and	
Conferences	110.46
Councilors' Expense ..	175.29
Council Expense	151.27
Postgraduate	
Instruction	25.77
Traveling Expense and Advances	600.00
General Expense	77.02
Dues Refunded	12.00

Total Disbursements.... 7,227.72

Cash Balance March 31, 1943..... \$27,225.95

Represented by:

Mercantile-Commerce Bank and	
Trust Co.	\$26,864.29
Mercantile-Commerce National	
Bank	336.66
Petty Cash Fund	25.00

Total\$27,225.95

C. E. HYNDMAN, Treasurer.

On motion, duly seconded, the report was referred to the Council.

The report of the Committee on Scientific Work, Dr. Harry C. Lapp, Kansas City, Chairman, follows:

REPORT OF THE COMMITTEE ON SCIENTIFIC WORK

The report of the Committee on Scientific Work is embodied in the program which appeared in the April issue of *THE JOURNAL*. The Committee feels that an extremely valuable and practical program has been arranged. With the curtailment of the time of the Session to two days and the limiting of scientific work to one day, an attempt was made to plan a program that would give the members the most possible in that length of time. The Committee hopes that members will gain from the Session as the Committee believes they will.

HARRY C. LAPP, Chairman,
RALPH A. KINSELLA,
NATHAN A. WOMACK.

On motion, duly seconded, the report was accepted.

The report of the Committee on Postgraduate Course, Dr. C. H. Neilson, St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE ON POSTGRADUATE COURSE

The Committee on Postgraduate Course is just as interested in postgraduate work as ever but the activities this year have been reduced: first, because of reduced funds of the Association as many of the members of the Association are in the armed services and in most cases their dues have been remitted; second, because of traveling difficulties, at least to distant parts and, third, it is wartime and most of the physicians are very busy

and cannot and will not attend meetings or take speaking assignments.

However, there were two Councilor District meetings during the year. The first was the Eighth Councilor District meeting held at Springfield with an attendance of 125. Drs. Raymond Muether, Joseph Hardy and E. C. Funsch, St. Louis, were speakers at this meeting. The second was the Sixth Councilor District meeting at Marshall at which Drs. Arthur W. Neilson and Joseph Hardy, St. Louis, were the speakers.

During the year sixteen physicians were guest speakers at twelve meetings of eight component societies.

The Committee hopes in the future that these activities can be increased but probabilities are that for the duration of the war postgraduate instruction must be kept at a minimum.

C. H. NEILSON, Chairman,
M. PINSON NEAL,
C. T. BLOOMER,
REXFORD L. DIVELEY,
GUY D. CALLAWAY.

On motion, duly seconded, the report was accepted.

The report of the Committee on Publication, Dr. Ralph L. Thompson, St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE ON PUBLICATION

January 1, 1942, to January 1, 1943

The 39th volume of *THE JOURNAL* was completed with the December issue. During 1942 there were published in *THE JOURNAL* sixty-four original articles, seven case reports, seven special articles, thirty-six editorials, seventy-two news items, twelve organization activity articles, twenty-three miscellaneous articles, sixty-seven obituaries, three councilor district reports, thirty-two society proceedings, one Woman's Auxiliary article, four correspondence, one hundred eight book reviews and thirty commercial announcements. There were 394 pages of reading material and 382 pages of advertising. The books received for review were distributed to medical libraries in the state.

Advertising in *THE JOURNAL* from January 1, 1942, to January 1, 1943, earned \$9,131.59 with \$1,138.08 to be collected, totaling \$10,269.67. Subscriptions of nonmembers amounted to \$33.05, making \$10,302.72 actually earned by *THE JOURNAL*. The cost of production of *THE JOURNAL* (printing and illustrations) was \$7,541.44.

RALPH L. THOMPSON, Chairman,
RICHARD B. SCHUTZ,
M. H. SHELBY,
R. C. HAYNES.

On motion, duly seconded, the report was accepted.

Dr. Morris B. Simpson, Kansas City, Chairman of the Committee on Public Policy, reported as follows:

REPORT OF COMMITTEE ON PUBLIC POLICY

It is difficult to make a preliminary report on public policy because legislative matters are involved. This year, to make it more interesting and to give some information regarding legislative matters, I have brought in an able assistant, one of our own members, Dr. J. A. Gray, who is chairman of the Committee on Public Health of the House of Representatives. This is his fifth term in the House, which shows he is popular among his own people as well as with the profession. Dr. Gray, I am sure will give some interesting information, particularly on House Bill No. 85. It is a great pleasure to present our own Dr. Gray. I know you will enjoy hearing him.

DR. J. A. GRAY, ROCK PORT: I want to begin by giving a few of the highlights of the session at Jefferson City. As Dr. Simpson has said, I have been there for the last five sessions, including two special sessions. For-

merly, I was somewhat embarrassed every year, feeling I ought to offer some sort of an apology or excuse as the rest of them would be thinking, "What is an M.D. doing in the Missouri House of Representatives? He ought to be at home attending to the public." But I began to get over that. I have enjoyed my service there, and in the meantime I have become an expert in jujitsu.

Regarding House Bill No. 85, on perfection, the vote was 53 to 52 in favor. When that bill came up and the vote was taken, there was a great deal of discussion going on in the House and I think one or two who voted "No" when the report came in had voted "Aye." We did not know that until the next day when we received the roll call.

It is amazing how difficult it is to explain House Bill No. 85. If one tries to explain it to the people he finds out how difficult it is. One member said "It reads like a sheet of music." When it was presented, Dr. Still himself said that the Attorney General had prepared the bill. Of course, the attorney general had to write it before it came to the Legislature. The bill as read does not repeal any law, but it adds a new section to a statute. There were only fifty-six sections, and it now has a new section, Section 56-A. That Section attempts to set out what the Legislature meant in 1897 when it passed the Homeopathic Bill, and also directs particular attention to the Medical Practice Act. It sets out and provides that the Legislature now shall say what was the intent of the Legislature way back in years gone by. I feel that it is a very peculiar law, and whether it will stand under the heat of the courts, I do not know. The bill as it now stands simply gives the osteopaths all the rights and privileges of the M.D.'s in every respect. That is the legislative intent. When that bill was first introduced it was a particularly rash bill because it also set out that the Legislature should direct the boards of hospitals, tax-supported, that osteopaths should be allowed to practice therein. There was so much criticism of the bill as first introduced that it was taken up by the newspapers of the state. If it had passed, it would have closed some of the great institutions of the state. So they amended the bill and agreed to leave it in the hands of the hospital boards whether or not they would accept osteopaths. That is the way it stands now. There was a great deal of heat on that bill and the vote was so close only because there are legislators today who think it is a sort of innocent bill.

The thing I want to point out is the fact that the osteopaths are stronger in the country than anywhere else. Up until the last session, the medical profession of this state hardly knew there was a legislature going on. I know that for a fact. But we have made many friends this year and the profession is doing a fine job.

In the House there is one Representative whose daughter is an osteopath, another whose brother is an osteopath and another whose wife is an osteopath.

One Senator recently said to me, and he had been a good friend of the profession, "The M.D.'s never come down here, and I think I have received only four letters." The osteopaths are there every time any type of medical bill is up for consideration.

To protect the public, we do not need one dollar of "slush fund"—all that is needed is the good will that is due the medical profession. One man who has been in every session since 1935 told me that during that time there never has been a vote taken, either in the Senate or the House, on the Basic Science Law; the House will not accept it. Who blocked it and why?

House Bill No. 85 has been discussed more than any bill I have seen since the Kansas City Police Bill. It has cut squarely between friendships. But I want to say to the medical profession, do not be discouraged.

House Bill No. 299, the Basic Science Bill, is in the Public Health Committee now and it is going to be voted on next Tuesday at the recess hour.

There is another bill, the Prefix Bill. That bill passed

the Committee on Public Health of the House—nobody objected to it—it obviously was fair. It is now in the Public Health Committee of the Senate.

House Bill No. 85 is important. If passed, it will cause a lot of embarrassment to boards and superintendents of hospitals, and I want to point out that the people in charge of the big hospitals of the state should write to their representatives; they have done some of it and it has had a tremendous effect.

DR. M. B. SIMPSON, KANSAS CITY: Just briefly, I will give you some data on other things that have happened. The annual bill in regard to naturopaths, which has been defeated in the Senate Committee, has been reported out of the Public Health Committee of the House recommending that it pass.

There has been a bill introduced which would have a bad effect on group hospitals and the handling of those patients. This bill is before the Committee on Insurance of the Senate and seeks to bring group hospital insurance under the State Department of Insurance and subject to the same regulations as commercial companies. Logical objections have been made to this bill before the Committee.

Dr. Gray mentioned the Prefix Doctor Bill, which is out of the House and in the Senate and should be passed, as it was two years ago, with the hope that the Governor is willing to sign it at this time.

The blood test bill has passed and was placed before the Governor, who has signed it. There has been considerable controversy over whether or not the term physician as used in the bill includes osteopaths. Eventually the courts may have to decide this issue.

I think Dr. McVay has some slides that will take only a few minutes to show. These slides will conclude our report.

DR. JAMES R. McVAY, KANSAS CITY: The tendency of the medical profession has been that the Legislature must do everything to take care of it—that it need do nothing. That is why Dr. Still has the position he has today. I think none of us is willing that House Bill No. 85 should become a law, but Dr. Mantz and I became interested in the position of the osteopaths through the state. We have put our figures together and tabulated this knowledge. The first slide demonstrates the 53 to 52 vote, with 25 absent, 12 not voting and 8 absent with reason. We cannot take the position that everything is fine, that we have conquered the important part of the battle because the vote went over 53 to 52; the important part of the battle is ahead. Every physician should see his representative and explain to him the implications behind House Bill No. 85 before it comes up for final passage.

I think this slide pictures better than words can do, the situation in Missouri, how critical it is and how necessary activity is among the physicians, continued activity.

DR. CURTIS H. LOHR, ST. LOUIS: I believe that everyone in this House of Delegates is aware of the fine work that has been done by Dr. Gray and by his associate, the Representative from St. Louis, Dr. E. J. Lee, and I think we are all aware of the fact that these two gentlemen, through their pioneering work and persistent and untiring efforts, have greatly aided the medical profession; without it, the cause of the medical profession would be lost. I therefore move that this House of Delegates express its appreciation to Dr. Gray and Dr. Lee by a rising vote of thanks.

Motion was seconded and unanimously carried.

Drs. E. R. Brown, University City; G. V. Stryker, St. Louis; E. R. Spence, Kennett, discussed present and future activity of the Community Health League.

On motion, duly seconded, the report of the Committee on Public Policy was accepted.

THE SPEAKER: We will now have the pleasure of hearing from our guest, Dr. Morris Fishbein, Chicago, Editor of the *Journal of the American Medical Association*.

DR. MORRIS FISHBEIN, CHICAGO: I expect to talk at some length this evening on the problems of postwar planning for medical service, and I have been especially interested in the reports and discussion I have heard here relative to legislation regarding the training and practice of osteopaths and other cultists in Missouri and, of course, throughout the United States as well. It is a problem which comes to the desk at headquarters, along with other problems relating to medical education. I realize that at the present time there are many factors of importance that will affect the education and training of cultists of all types in the United States and, in fact, affect medical education as well. I refer first of all to the whole problem of war manpower. In this connection it has become necessary to scrape the bottom of the barrel, to use the words of General Hershey, Mr. McNutt and others who have this problem to contend with—it has become necessary to scrape the bottom of the barrel, and it will be necessary to cancel a great many deferments that have been given to young men in educational institutions of one kind and another, and it will be necessary to place in medical schools a considerable number of men who will be under the Army training program and will be educated at military expense. In that event one may expect to see very definite changes and, on the basis of what has been heard thus far, I would not be surprised, if the war should last a year, that all the chiropractic schools will be closed. That is bound to take place because the men of 18, and all other physically fit men will be called and will not be available for education of that type, and education of that type will not be deferrable by the Selective Service system; that refers to students and their teachers. With regard to the education of osteopaths, I made the very definite statement that there was no justification for continuous education of osteopaths on the simple ground that they are not eligible for medical commissions in military service. A man said to me the other day, "You would not place the osteopaths in the same category as chiropractors," and I replied, "That is simply a matter of degree. They began as chiropractors, and began under chiropractors. What you need to do is to go back and read history. Do not read or listen to the things they say; go back and read the history of the osteopaths, the history of the chiropractors, and trace their evolution." I think that is the best thing one can do—supply these people with a history of these two systems of healing.

Many other colleges will be closed. I would not be surprised if half of them would close after another year of war. That will have a tremendous effect on

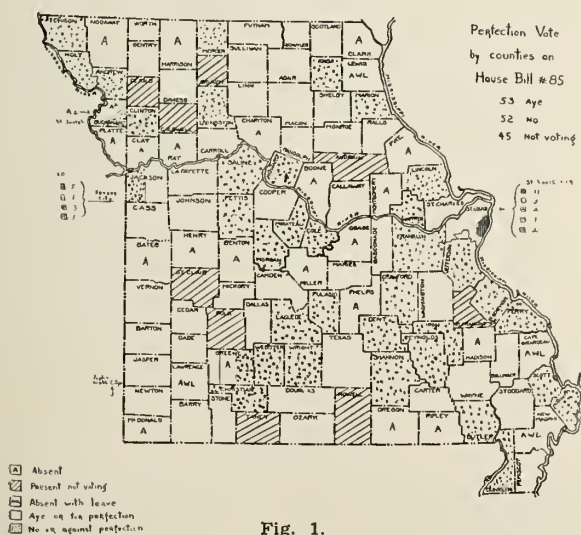


Fig. 1.

education as a whole, and it means attacking at the source the men who go into these institutions. I only hope members of this House of Delegates are familiar with the report of the Office of War Information and the distribution of that report on medical practice in the United States, which was published a year or two ago. The government, as you know, is a government with a tremendous number of agencies. I could tell you some of the inside history of that report. I happened to have an opportunity to see the report before it was released to the public. It was the plan to break down confidence in private practice of medicine; they planned to show that medicine was failing to meet its obligations; they came to some very positive conclusions that medical practice would have to be changed, with a different distribution throughout the nation by government authority. But when it came to vote they were successful in having eliminated some of the conclusions that would have had a tremendous effect on medical practice.

I had a letter from a city in New Mexico saying that since the Army was taking their doctors the osteopaths were moving in in tremendous numbers, and I have no doubt but that that is correct. I saw in the newspaper not long ago that the government is commissioning women in the armed forces. I will not commit myself on that, one way or another, but I do know that there are no osteopaths as commissioned medical officers in the armed forces, and Dr. Ross McIntyre, the Surgeon General, has expressed a very definite policy on that matter. Not long ago I spoke in Detroit at their Town Hall before four thousand people, and one woman asked me why osteopaths were not commissioned in the United States Army, and I told her. I was sued for \$200,000.00 for libel and slander. When they came to serve the subpoena I was out of town, but it was waiting for me when I returned. But the case was thrown out of court. They have had a lot of trouble in California with osteopaths, and still are battling them. But I agree with your legislative committee that a sufficient amount of suggestion, with a sufficient amount of authority behind it, has more effect on a legislator than a couple of highballs before a good dinner. I have always held that opinion, and I have seen it proved again and again. The thing to do is to explain to the legislator, fully, the exact facts with authority behind what you say; tell him the real situation, and unless he is deficient mentally he will vote right. Of course, American medicine must never stoop to any kind of threat to influence a legislator. One must always keep in mind that our standards of medicine and our ethical standards are the highest, not only in this country but throughout the world. We have in the United States 186,000 men who are practicing medicine: 45,000 are now in the armed forces, and probably 60,000 will be there before this war is over. If a body of men of that strength cannot influence the American people to understand what medicine is, as against six or seven thousand osteopaths, then of course all we want to do is to forget the osteopaths and let them alone.

My best advice in this matter is that we support these men who show they are efficient by educating your legislators as to the meaning of scientific medicine, and then leave it to the natural evolution of scientific medicine in time of war, with the certainty that, whatever comes, there will always be a place for the scientific practicing physician.

The report of the Committee on Defense, Dr. C. E. Hyndman, St. Louis, follows:

REPORT OF THE COMMITTEE ON DEFENSE

April 1, 1942, to March 15, 1943

Status of Cases

Cases pending April 1, 1942.....	5
Threats pending April 1, 1942.....	0
New cases since April 1, 1942.....	3

New threats since April 1, 1942.....	0
Cases settled during the year.....	2
Threats dropped during the year.....	0
Cases pending March 15, 1943.....	6
Threats pending March 15, 1943.....	0

Of the two cases settled during the year, one case was dismissed and the other was settled out of court.

C. E. HYNDMAN, Chairman,
O. B. ZEINERT,
L. P. FORGRAVE,
M. J. OWENS.

Dr. HYNDMAN, CHAIRMAN, reporting further, said: This is a small report. I do not want it to give the idea that this represents the number of malpractice suits in Missouri. This is not 50 per cent. This simply represents those cases in which there was some particular reason for asking advice and aid and, in two instances, in which the physicians had no insurance. Practically every physician in the state carries insurance, and he should. Then he has something to depend upon, to fall back on for legal defense, and if this Committee can aid in the organization of the physicians in Missouri along that line, the profession will be in better position. In St. Louis there were perhaps ten times as many cases filed as ever before, so do not get the impression that the matter of malpractice suits is well in hand; it is not. Suits are going on, as they always have, and probably increasing, but with the aid of insurance, the matter is better taken care of.

On motion, duly seconded, the report was accepted.

The report of the Committee on Cancer, Dr. Dudley A. Robnett, Columbia, Chairman, follows:

REPORT OF THE COMMITTEE ON CANCER

During the last year there has been relatively little done by the Committee on Cancer inasmuch as several members are in the armed forces. Cancer education has been carried on through the auspices of the Field Army and the Ellis Fischel State Cancer Hospital has functioned throughout the year taking care of indigent patients.

DUDLEY A. ROBNETT, Chairman,
W. E. LEIGHTON,
F. G. THOMPSON,
EDWIN C. ERNST,
E. KIP ROBINSON.

On motion, duly seconded, the report was accepted.

The report of the Committee on Medical Economics, Dr. Carl F. Vohs, St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE ON MEDICAL ECONOMICS

The Committee is steadily developing the program adopted during the past few years by the Missouri State Medical Association. Problems coming before the Committee from Group Hospital Service, the Farm Security Administration and the osteopathic situation have been considered and recommendations have been made to the Council on these matters. Prepayment medical plans, the proposed Health Security Administration of the State of Missouri, the Workmen's Compensation Act, Basic Science Law and the Medical Licensure Law have been studied for future action.

Plans in Southeast Missouri have developed satisfactorily. The local committee working with the State Committee on Medical Economics put the plan into operation on January 1, 1943. The program and the building of the hospital have been delayed by war conditions.

Hospital Service Plans

St. Louis Plan

Group Hospital Service of St. Louis begins its eighth year of community service in April by protecting 300,000 persons. The majority of the members reside in the

Greater St. Louis area but many thousands are protected who live in Southern Illinois and the outlying cities and counties of the state with the exception of Jackson and Clay counties which are covered by the Kansas City plan of Group Hospital Service.

This organization sponsored by the St. Louis and Missouri State Medical societies jointly now receives in dues from members approximately \$2,000,000 annually. Approximately 71 per cent of the members' dues is paid directly to member hospitals caring for the patient members. Administrative expense represents another 9 per cent, and enrollment or acquisition expense represents 2.3 per cent; the balance of the income is held in reserves for the protection of the members and of the hospitals.

Membership rates have not been changed since the inception of the plan, but benefits have been added for the members on eleven different occasions; the hospitals are receiving increased amounts and it is likely that they will need to receive even more under present conditions. The Board of Trustees of Group Hospital Service is conducting studies looking toward this end and the Committee is in complete accord with the attitude of Group Hospital Service in its very conscientious understanding of the problems of our hospitals.

At the present time there are eighty-seven participating hospitals in the St. Louis plan and it is considered one of the best examples in the voluntary field. The St. Louis plan is in a particularly sound financial position, having reserves approximating \$3.00 per person covered to meet any contingency. About 2,500 of their members are hospitalized monthly, and in recent months nearly 600 babies were born whose bills for their parents and themselves were paid by Group Hospital Service.

It is a pleasure to report that both our St. Louis and Kansas City plans have adhered strictly to the ethics of organized medicine. They have shown a splendid type of leadership in the field of health economics by not transgressing into the realms of the practice of medicine. Likewise, they have provided the members with one of the lowest cost plans in the country and established reserves that are not surpassed by any comparable plan. All of this would have been sufficient approbation from the viewpoint of the Missouri State Medical Association but, in addition, Group Hospital Service of St. Louis has earned an unusual niche for itself and the hospitals in each community in which they operate. They have declined to pay less than half of one per cent of the claims presented and they have cooperated unstintingly in every good civic effort that related itself to the welfare of the community.

Group Hospital Service of St. Louis enrolls approximately 7,500 new members monthly; this is a slight decrease from previous years but the cause is apparent in the instability of workers in their positions in war industry as well as men leaving for the armed services.

As of this date, Group Hospital Service has invested \$800,620.37 in United States government bonds. In addition, they have approximately \$250,000 in cash in operating accounts.

Kansas City Plan

Medical Economics in Kansas City has passed through an extremely active period during the last year.

Group Hospital Service, Inc., more popularly known as the Blue Cross Hospital Service Plan, has gained strength and some expansion, despite rapidly changing conditions brought on by the war. Multiple problems have been encountered.

Thousands of members have entered the armed services leaving wives and children to manage on a reduced income. Other thousands have shifted from peacetime occupations to those of war material production. Hospital operating costs have increased. There has been a shortage of hospital beds and doctors. Activities of nonmedical practitioners have been very aggressive.

All of these matters and other problems have been met with a satisfactory degree of success insofar as the

Blue Cross Plan is concerned. Membership in the Kansas City Plan as of March 1, 1942, was 71,659 members. The Plan's membership as of March 1, 1943, had increased to 98,000 members. Reserves per person covered increased to \$2.25; per contract in force the current reserves equal \$5.00. The Plan paid for 8,715 cases in member hospitals for a total of 73,482 hospital days. In addition to these cases, several hundred were paid in nonmember hospitals in the United States, Canada and other countries.

Several corrective measures in the structure of the organization have been put in force, and we may look forward to continued growth and increased strength despite the present unsettled conditions.

The development of prepaid surgical care has gone forward, and the organization and initial operations of a community surgical care plan on a prepaid basis, known as "Surgical Care, Inc." has been announced. The plan follows the pattern of the Blue Cross set up very closely. The board of directors is composed of fifteen physicians with an executive committee of five of the directors. The principle of group enrollment is followed, with a contractual arrangement with the Blue Cross Hospital Service Plan covering enrollment and operating services. We feel that an economy of operating cost can be achieved by using this method.

Benefits to members and dependents of Surgical Care cover: surgery, obstetrics, orthopedics, x-ray and radium and anesthesia. Two types of membership are available. The first is to employees in limited income groups whose annual income does not exceed \$1,800.00, unmarried; \$2,400.00 husband and wife; and full families regardless of size (children under 18 years), up to \$3,000.00 depending upon the number of children. Enrolled Doctors of Medicine (these may include all M.D.'s in the community) render their services without cost to the member. They accept the plan's payment on a flexible unit basis.

The second type of membership is available to all persons over the limited income level, again on a group basis. Services covered include those offered in the first type, with monthly membership dues for both types being: \$0.75 individual membership; \$1.50 husband and wife; \$2.00 full family.

Membership in the higher income brackets provides a schedule of service credits, payable to the enrolled Doctor of Medicine, with specific understanding that the physician accepts the service credit as such and is privileged to charge a fee in any amount as agreed between doctor and patient.

Limitations, or exclusions, are few in either type of membership. Maternity care is offered only on the full family membership after ten consecutive months of membership. Tonsillectomy benefits are available only after six months of consecutive membership.

Jackson County physicians believe the combination of the surgical plan and the hospital plan will answer completely the need for protection against costly and catastrophic occurrences of this nature.

The Committee again wishes to call attention to the fact that the state has been divided into five districts, based upon Councilor divisions. The following is the assignment of Councilor Districts: Dr. Ira H. Lockwood, Kansas City, Councilor Districts 7 and 8; Dr. E. L. Johnston, Concordia, Councilor Districts 1 and 6; Dr. W. F. Francka, Hannibal, Councilor Districts 2 and 5; Dr. Carl F. Vohs, St. Louis, Councilor Districts 3 and 4; Dr. C. A. W. Zimmermann, Cape Girardeau, Councilor Districts 9 and 10.

The Committee is very anxious to have members report their problems and progress to these members so that the Committee may be of greater help. Invite the Committee member to meetings to discuss all economic questions.

National Social Security Implications

It is evident from many sources that the practice of medicine will undergo many changes in the near future.

We are confronted with the Beveridge plan in England and with the proposals of President Roosevelt as drawn up by the National Resources Planning Board.

This Committee has studied the Eliot bill introduced into the House and its companion bill, the Greene bill, in the Senate. The implications in these bills are very broad and bespeak changes in the practice of medicine in this country. It becomes necessary for the State Medical Associations to keep their knowledge on these matters up-to-date to be ready for action. It is for this reason that the Committee advocates the formation of a committee to study and plan for postwar conditions, working with the Committee on Medical Economics and Committee on Rural Medicine. This committee could take the prepayment medical plan out of the "icebox," bring it up-to-date and present it to the Council and the Delegates for immediate consideration.

The Committee advocates the introduction of the following bills in the state legislature: (1) Basic Science Law, (2) Medical Lien Law, (3) Revision of the Workmen's Compensation Act.

The Committee recommends:

1. The appointment of a postwar planning committee.
2. The development of a medical surgical plan on a statewide basis.

CARL F. VOHS, Chairman,
E. L. JOHNSTON,
C. A. W. ZIMMERMANN,
W. F. FRANCKA,
IRA H. LOCKWOOD.

On motion, duly seconded, the recommendations in the report were referred to the Reference Committee on Miscellaneous Affairs.

The report of the Committee on Mental Health, Dr. B. Landis Elliott, Kansas City, follows:

REPORT OF COMMITTEE ON MENTAL HEALTH

The Committee on Mental Health has been working on a program for the State Hospital and has met with the Council of the State Association. The Committee submits this program. It feels that the state should have a Department of Mental Hygiene in charge of a hygienist, as New York, Pennsylvania, Delaware and Kentucky have. The Committee thinks that state hospitals which are under the divided responsibility of state and county should be under the state alone; that they can operate more successfully. Instead of having county patients transferred by the sheriff, the state hospital should have personnel to take care of that.

The law which provides that only one physician shall be employed for every three hundred patients should be repealed. There should be provision for voluntary commitments.

This program was approved in principle by the Council and is backed by the Missouri Association of Mental Hygiene and others interested. There is little chance of this program being carried out at present but it is hoped that this goal will be kept in mind and that strenuous efforts be made toward this goal in future years.

B. LANDIS ELLIOTT, Chairman,
FRANK M. GROGAN,
E. F. HOCTOR,
R. P. C. WILSON,
RALF HANKS.

On motion, duly seconded, the report was accepted.

The report of the Committee on Maternal Welfare and Infant Care, Dr. E. Lee Dorsett, St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE ON MATERNAL WELFARE AND INFANT CARE

It is with deep sorrow that we face the coming year due to the loss of our Chairman, Dr. Ralph Wilson. Dr.

Wilson has been the moving spirit in this Committee and has carried the majority of the burdens and activities since this Committee was first organized. He is irreplaceable.

The war program, municipal, state and Federal, has in a great measure superceded all other interests in this Committee. Through them, distribution of Federal funds has been made through other channels outside this Committee.

The last meeting of this Committee was held October 28, 1942, at the Jefferson Hotel, St. Louis, with the Chairman, Dr. Ralph Wilson, presiding. Dr. Fred Adair, Chicago, one of our foremost obstetricians and who has fostered the idea of maternal welfare throughout the country, was our guest. Dr. Curtis H. Lohr, St. Louis, Councilor of the Third District, was also a guest.

Dr. M. L. Gentry, Director, Division of Child Hygiene, State Health Department, was one of our guests. Among subjects discussed were prepaid medical plans, "state medicine" tendencies and the problem of osteopathy. Dr. Gentry presented a series of prenatal letters to be sent to expectant mothers throughout the state; also a series of postpartum letters. Following a general discussion these letters were accepted with some slight changes.

Plans were made and have been carried out for the issuance of a number of THE JOURNAL taking up "Infant Care." This was published in March.

The subject of obstetric care of war workers and wives of enlisted men within the boundaries of the state was discussed.

The Committee on Maternal Welfare and Infant Care carries two rather conflicting subjects and the members of the Committee represent two distinct specialties in medicine. While in the main, they have one objective in view, there are a great many variances that tend to cause confusion and it is suggested that this Committee be divided into two committees, one on Maternal Welfare and the other on Infant Care; and that the former be composed of men who are interested only in the subject of obstetrics while the latter committee be composed of pediatricians.

E. LEE DORSETT, Chairman,
JOHN AULL,
JOSEPH D. JAMES,
W. H. BREUER.

On motion, duly seconded, the report was accepted.

The report of the Committee on Constitution and By-Laws, Dr. H. L. Mantz, Kansas City, Chairman, follows:

REPORT OF THE COMMITTEE ON CONSTITUTION AND BY-LAWS

It has been suggested that the Speaker and Vice Speaker be elected a year before they take office.

In reference to the election of the Speaker and Vice Speaker:

Article V, Section 2 of the Constitution, specifies the officers of the House of Delegates and that they are to be elected by the delegates from their body. No amendment is needed here.

Article IX, Section 1, further classifies the Speaker and Vice Speaker as officers of the Association. Section 2, same article, states that they shall be elected annually and does not specify when.

Chapter IV of the By-Laws details the procedure for the election of officers.

The simplest procedure would be to continue the present Speaker and Vice Speaker in office as the Constitution provides (Art. IX, Sec. 2) that officers serve until their successors are elected and installed. If the present Speaker and Vice Speaker do not attend, a Speaker and Vice Speaker could be elected pro tem. The Nominating Committee appointed by the President (Chap. IV, Sec. 1, By-Laws) should include Speaker and Vice Speaker in its slate. This would

make the nominations necessary: three Vice Presidents, Speaker, Vice Speaker and Delegates to the American Medical Association.

Therefore, to secure the election of the Speaker and the Vice Speaker, no amendments are necessary.

Amend Art. IV, Sec. 6, which reads:

Sec. 6. Delegates shall not be eligible for election to any of the offices named in the Constitution, except that of Councilor.

to read as follows:

Sec. 6. Delegates shall not be eligible for election to any of the offices named in the Constitution except that of Councilor, Speaker and Vice Speaker of the House of Delegates.

This amendment should have been made long ago.

Amend Chap. VI, Sec. 12, which reads:

Sec. 12. The Council shall be empowered to elect an Executive Secretary who need not be a member of the Missouri State Medical Association, who shall perform such duties as the Council may designate and who shall receive such salary and serve for such periods and under such conditions as the Council may determine.

to read as follows:

Sec. 12. The Council shall be empowered to elect an Executive Secretary and Assistant Executive Secretary and such other personnel as may be necessary who need not be members of the Missouri State Medical Association, each of whom shall perform such duties as the Council may designate and receive such salary and serve for such periods and under such conditions as the Council may determine.

Sec. 3, Chap. VII, which reads:

Sec. 3. The Committee on Public Policy shall consist of three members, and the President and President-Elect, and such other members whose experience suggests their value in emergency, to be called by the chairman of the Committee. There shall be a joint meeting of this Committee and an auxiliary committee, as provided for in Chapter XI, Section 10, of these By-Laws, held annually, as may be ordered on the call of the chairman or three members of the State Committee. The Chairman of the State Committee, and in his absence, the President, shall act as chairman at the joint committee meetings. Under the direction of the State Committee, the joint committee shall represent the Association in securing and enforcing legislation in the interest of public health and of scientific medicine.

should be eliminated or amended to read as follows:

Sec. 3. The Committee on Public Policy and Public Relations shall consist . . . (to last two lines beginning the Association, then continue) the Association in promoting the relations between the profession and the public, and in procuring public cooperation in the interests of public health and scientific medicine.

Amend Chap. VII, Sec. 1:

a. Committee on Public Policy

to read:

a. Committee on Public Policy and Public Relations.

Amend Chap. XI, Sec. 10, which reads:

Sec. 10. Each county society shall appoint or elect one of its members as a member of the Auxiliary Committee on Public Policy and the county society secretary shall send his name and address at once to the Secretary of this Association. The Committee on Public Policy of this Association shall formulate the duties of the auxiliary committee and supply each member with a copy. The auxiliary committeemen shall be accountable to their county societies and to the Council

for prompt response to and continued cooperation with the Committee on Public Policy of this Association.

by adding the words "and Public Relations" after the words "Public Policy" in each of the three places where they appear.

Amend Chapter VII, Sec. 5, which reads:

(c) Any member desiring to avail himself of the provisions of this section shall, within three days after any demand has been made upon him, present his request to the Secretary of this Association, together with a complete history of the case and the services therein rendered. The Committee shall then, with the aid of its counsel, advise said member up to the time of the institution of suit. Should suit be filed a copy of the plaintiffs petition must be immediately forwarded to the Secretary of this Association. The Committee shall thereupon provide such medical expert and legal services of counsel as may be necessary, but in no case shall the cost to this Association be in excess of \$300 for all such services. The Association does not obligate itself to pay, nor shall it pay in whole or in part, any damages agreed upon in compromise, or awarded after trial, nor shall it pay any of the expenses incident to the taking of depositions nor any of the costs of court. (As amended 1930)

so that it will read:

(c) Any member desiring to avail himself of the provisions of this Section shall, within three days after any demand has been made upon him by any claimant, present his request to the Secretary of this Association, together with a complete history of the case and of the services performed. The Committee shall then, with the aid of counsel, advise said member, and should suit be filed, a copy of the plaintiff's petition and the summons must be forwarded immediately to the Secretary of this Association. The Committee shall thereupon provide such legal services as may be necessary, but in no case shall the cost to this Association be in excess of \$300. The Association shall not be obligated to pay nor shall it pay either in whole or in part any sum agreed upon in compromise, nor any judgment or part thereof nor shall it pay any of the costs of taking depositions nor any court costs.

Amend Chapter XI, Sec. 5, which reads:

Sec. 5. In hearing appeals the Council may admit oral or written evidence as in its judgment will most fairly present the facts, but in the case of every appeal both as a board and as individuals, the councilors shall, preceding all such hearings, make efforts at conciliation and compromise.

by striking out all of the section after the word "facts" so that it will read:

Sec. 5. In hearing appeals the Council may admit oral or written evidence as in its judgment will most fairly present the facts.

Amend Chapter XI, Sec. 3, by adding the following:

The Council may upon request of a component Society waive the dues of any member in good standing for such a period as the member is serving in the Armed Forces of the United States of America, the United States Public Health Service or of similar services with any of the allies of the United States.

In regard to dues it is the Committee's opinion that no change be made in the By-Laws inasmuch as Article X gives the House of Delegates authority to make an assessment. The House of Delegates should either make such an assessment or give the Council this authority.

Chap. XI, Sec. 11, which reads:

Sec. 11. The State Association, or a county society in manner approved by the State Association, may undertake and coordinate all sickness, care of indigents

and low income groups through agreements with public officials, and with physicians and others and by the use of contributions, cooperative funds and other means, provided only that free choice of physicians within such agreements shall be retained and that responsibility of physician to patient shall remain as though the dealings were direct between physician and patient.

should either be eliminated entirely or should be amended to read:

Sec. 11. Any County Society, in a manner approved by the State Association, or the State Association, with the consent of the County Society or Societies affected, may undertake, organize and put into effect plans for the medical care of indigent persons or groups and low income groups by agreements with physicians, public officials or others and by the use of contributions, cooperative funds or other means, provided, however, that a free choice of the available and participating physicians in that territory shall be allowed to the patient and that all relationships, legal or otherwise, between the physician and the patient shall be and remain as though it were strictly an individual employment.

At the 1942 Annual Session of the Association, the Committee on Constitution and By-Laws was instructed by the House of Delegates to study and report in 1943 the feasibility of raising the dues, or, through a special membership assessment secure sufficient income to assure continuation of present necessary activities of the Association. Such consideration must be given at this time mainly because of the loss of income from dues of those members who have entered the armed services and from others who will enter during 1943. If component societies remit the dues of members who enter the service, the State Association does likewise. This procedure has, and will continue to, reduce the income to the Association. The following figures will serve to show the financial difficulty confronting the Association for 1943:

Membership

Total membership as of Jan. 1, 1942, including Honor Members and those in service	3,302	
Total amount of dues paid during 1942		\$22,284.00
Total membership as of Jan. 1, 1943	3,283	
Less Honor Members (no dues)	265	
Less members in service	610	
Less approximate number to enter service	170	
	1,043	
Those who theoretically would pay dues in 1943	2,240	
Amount anticipated in dues from 2,240 members...		\$17,920.00.

Anticipated loss in income from dues in 1943..... \$ 4,364.00

The assumption is that other income and expenditures of the Association will remain approximately the same during 1943 as they were in 1942.

The lowest surplus during 1942 which has been built up throughout the time of existence of the Association \$16,000.00

Under the above conditions, in three years the \$16,000.00 surplus would be wiped out and there would be no funds then available in the treasury of the Association for any emergency. Can we afford to have such a situation occur?

It is the opinion of the Committee on Constitution and By-Laws that the amount of the dues payable in the By-Laws not be changed at this time. The House of Delegates has been given the authority in the Constitution and By-Laws to declare an assessment. Since many societies have already collected dues for 1943, the Committee believes that it would not be advisable to make an assessment for 1943. The Committee further believes that an assessment of \$4.00 per member should be levied for 1944. This would take care of any deficit arising out of operation for 1943-1944, and might even add slightly to our surplus. It is essential that a surplus be built up as there may be many problems arising postwar that would require an unexpected outlay of

funds. At the present time, the Committee believes an assessment of \$4.00 will meet the approval of our membership.

HERBERT L. MANTZ, Chairman,
G. T. BLOOMER,
JOSEPH C. PEDEN,
ROBERT VINYARD,
OTTO W. KOCH.

On motion, duly seconded, the first part of the report was referred to the Reference Committee on Constitution and By-Laws and the latter portion to the Reference Committee on Resolutions.

The report of the Committee on Study of Cardiac Diseases, Dr. J. DeVoine Guyot, Jefferson City, follows:

REPORT OF THE COMMITTEE ON STUDY OF CARDIAC DISEASES

The activities of the Armed Forces of the government have made it impossible for the Committee to put into effect many of the things it had hoped to carry out.

Certain preliminary work has been gotten underway and the Committee was able to have one symposium on Cardiac Disease published in THE JOURNAL.

Beyond this, nothing has been done that would attract the profession as a whole; however, the Committee is ready to put into action numerous activities that will be of value when the men are not so rushed with general run of business but that they can give attention to special matters.

It is hoped that within the near future the Committee will be able to extend the knowledge of cardiology within the general profession but for the duration there is but little that can be done except to keep the Committee intact and ready to perform the function for which it was created.

J. DEVOINE GUYOT, Chairman,
A. GRAHAM ASHER,
JULIUS JENSEN.

On motion, duly seconded, the report was accepted.

The report of the Adviser to the Woman's Auxiliary, Dr. H. L. Mantz, Kansas City, follows:

REPORT OF THE ADVISER TO THE WOMAN'S AUXILIARY

The group of women in the Woman's Auxiliary over the state is perfectly willing to do a lot of work if they are given a job. As it is now, the Auxiliary is a social organization and the women are complaining that they are not given a specific job to do. The group is small in each county—and each county should have an Auxiliary. If they need financial assistance, the county societies should support them. I think this group could well be used in connection with the Community Health League. These women are all interested in the Association's problems and I suggest that each physician look into this matter when he returns home and try to organize a Woman's Auxiliary. If they are given a specific job to do, I believe they will do it. They have done a fine job in selling *Hygeia*.

I wish to present the following resolution endorsing *Hygeia*:

WHEREAS, The War Production Board advises that sick and injured war production workers lose 6,000,000 workdays each month, and

WHEREAS, Donald Nelson, Chairman of the War Production Board, and Paul V. McNutt, Chairman of the War Manpower Commission, and others are urging that every state and community make it their job to take an active part in saving as many of those lost days as possible for the Production Drive and keep the nation's workers on the job and physically fit, and

WHEREAS, The National Research Council is asking the general public to focus its attention on proper food and nutrition for better health defense, and,

WHEREAS, There is an urgent need for authentic health information and first aid training in home and factory and among the men in Army camps and Naval stations, and by

Red Cross workers, block captains and civilian defense authorities, and

WHEREAS, Thousands of physicians already have left civilian practice to enter the armed forces and by the end of this year more than 25 per cent of the active medical profession will be out of general practice, and

WHEREAS, The increased public demand for health information cannot be met alone by the heavily worked physicians who remain in private practice, and

WHEREAS, It remains the responsibility of the medical profession to do its utmost in disseminating to the laity health information and sound advice, and

WHEREAS, In 1921 at the Boston Session of the American Medical Association, the House of Delegates authorized the publication of *Hygeia*, The Health Magazine, which was designed to give sound health information in non-technical language, to interpret the progress in scientific and preventive medicine, and to discourage the reliance on quacks and the use of patent medicines, and

WHEREAS, There is no other national magazine in the field of health that offers the large amount of authentic health information in lay language, and

WHEREAS, This magazine, under careful scrutiny of the American Medical Association, maintains high professional standards of accuracy in its editorial and advertising policy, therefore be it

Resolved, That the House of Delegates of the Missouri State Medical Association, in recognition of the great public need for reliable health information and in recognition of the service that *Hygeia*, The Health Magazine, can perform in terms of industrial, civilian and community health, hereby endorse this magazine, and to this end recommend that officers and members of the county medical societies of the Missouri State Medical Association urge wider recognition of *Hygeia* in their communities. Be it further

Resolved, That we offer full support and complete cooperation to the Woman's Auxiliary to the Missouri State Medical Association and its affiliated units in their efforts to disseminate health information through *Hygeia*, The Health Magazine, and to urge them to introduce *Hygeia* in war industries, Army camps, U.S.O. Centers, reception rooms of physicians and dentists and among their patients, in homes, schools, teachers' colleges, libraries, parent-teacher organizations, private clubs and other community centers. Be it further

Resolved, That copies of this resolution be sent to the Editor of *Hygeia* at the headquarters of the American Medical Association in Chicago, and to the secretary of each component county medical society of the Missouri State Medical Association with the request that this resolution be read at the next stated meeting and similar action taken to cooperate in this health education campaign by widening the distribution of *Hygeia*, The Health Magazine.

On motion, duly seconded, the report was accepted and the resolution adopted.

The report of the Council, Dr. W. A. Bloom, Chairman, follows:

REPORT OF THE COUNCIL

The Council of the Missouri State Medical Association met at the Kentwood Arms Hotel, Springfield, at 10:30 a. m., August 30, 1942. Dr. Curtis H. Lohr, St. Louis, Chairman, presided. Those present were Drs. A. S. Bristow, Princeton; H. B. Goodrich, Hannibal; Curtis H. Lohr, St. Louis; C. E. Fallet, DeSoto; W. A. Bloom, Fayette; A. J. Campbell, Sedalia; Herbert L. Mantz, Kansas City; Wallis Smith, Springfield; E. C. Bohrer, West Plains; E. J. Nienstedt, Sikeston, Councilors; H. L. Kerr, Crane, President; A. W. McAlester, Kansas City, President-Elect; R. L. Thompson, St. Louis, Treasurer; Robert Mueller, St. Louis, Missouri State Chairman, Procurement and Assignment Service; R. M. James, Joplin, Secretary, Community Health League; Paul F. Cole, Springfield, President Greene County Medical Society; E. H. Bartelsmeyer, St. Louis, Executive Secretary.

The minutes of the meeting of the Council of April 29, 1942, were read and approved.

The President, Dr. H. L. Kerr, Crane, addressed the Council briefly.

Dr. R. L. Thompson, St. Louis, was elected Secretary-Editor.

Dr. C. E. Hyndman, St. Louis, was elected Treasurer.

The Chairman was requested to write Dr. Morris B. Simpson, Kansas City, Chairman of the Committee on Public Policy, that it was the unanimous request of the Council that he continue his valuable services as Chairman of the Committee on Public Policy.

The question of dues of members entering military

service and the constitutionality of the resolution on dues adopted at the last session of the House of Delegates were discussed. It was decided that the resolution should be termed invalid and that the Association should recognize the component societies' recommendations as to dues of members entering military service until a by-law covering the question could be passed.

It was voted to ask the Committee on Amendments to the Constitution and By-Laws to prepare a by-law covering the dues of members entering military service.

Dr. Robert Mueller discussed the Procurement and Assignment Service and answered questions.

Col. George Foster, O'Reilly Hospital, Springfield, was the guest of the Council for lunch and addressed the Council briefly. He invited members of the Council to visit O'Reilly Hospital at the close of the Council meeting.

Dr. Lohr tendered his resignation as Chairman of the Council because of his imminent call into service. A vote of thanks to Dr. Lohr for his work as Chairman of the Council was passed unanimously.

Dr. W. A. Bloom, Fayette, was elected Chairman of the Council, and Dr. H. B. Goodrich, Hannibal, was elected Vice Chairman.

Meeting of September 20

The Council of the Missouri State Medical Association met at the Coronado Hotel, St. Louis, at 10:30 a. m., September 20, 1942. Dr. W. A. Bloom, Fayette, Chairman, presided. Those present were Drs. A. S. Bristow, Princeton; Curtis H. Lohr, St. Louis; W. A. Bloom, Fayette; A. J. Campbell, Sedalia; H. L. Mantz, Kansas City; Wallis Smith, Springfield; E. J. Nienstedt, Sikeston, Councilors; H. L. Kerr, Crane, President; R. L. Thompson, St. Louis, Secretary-Editor; C. E. Hyndman, St. Louis, Treasurer; R. M. James, Joplin; E. Lee Dorsett, Joseph C. Peden, C. H. Neilson and Robert Mueller, St. Louis.

The question of Executive Secretary was discussed and the following resolution was adopted:

WHEREAS, Mr. Elmer Bartelsmeyer, Executive Secretary of the Missouri State Medical Association, is now physically disabled and is no longer qualified to perform the duties of his position and, furthermore, that Mr. Bartelsmeyer has recognized his infirmities and has requested that he be placed in a less arduous position, be it

Resolved, That the Council of the Missouri State Medical Association has, recognizing the superior and faithful services rendered to the Association by Mr. Bartelsmeyer, seen fit to place him on a part-time basis as a consultant subject to call at a salary of \$300 per month until the expiration of his present appointment, and be it further

Resolved, That the Council recommends to the House of Delegates that Mr. Bartelsmeyer be retained in an advisory capacity in the future at a salary of \$150 per month.

Mr. Raymond McIntyre, formerly connected with Central College, Fayette, in a promotional and contact capacity, was appointed Acting Executive Secretary.

The Chairman announced that the following statement had been included in the platforms of both political parties following recommendation of the Committee on Public Policy of the Association: "We recommend that in the interest of the nation's health a comprehensive health program be developed based not on Federal but on local responsibility; controlled not centrally through a Federal agency but through the states and counties; not exclusively governmental and compulsory but voluntary so that the traditional cooperation in the care of the nation's health may be maintained and greatly intensified to meet the growing needs of the nation."

It was decided to hold the Annual Session of the Association as a two day meeting instead of the usual three day session, cutting the scientific program to meet the shortened time.

It was decided to encourage Councilor District Post-graduate meetings during the fall and winter months.

Dr. Robert Mueller, St. Louis, Missouri State Chairman of Procurement and Assignment Service, spoke briefly and answered questions of Councilors.

Meeting of December 13

The Council of the Missouri State Medical Association met at the Coronado Hotel, St. Louis, at 10:30 a. m., December 13. Dr. W. A. Bloom, Fayette, Chairman, presided. Those present were Drs. H. B. Goodrich, Hannibal; Curtis H. Lohr, St. Louis; C. E. Fallet, DeSoto; W. A. Bloom, Fayette; A. J. Campbell, Sedalia; H. L. Mantz, Kansas City; Wallis Smith, Springfield; E. C. Bohrer, West Plains; E. J. Nienstedt, Sikeston, Councilors; H. L. Kerr, Crane, President; A. W. McAlester, Jr., Kansas City, President-Elect; R. L. Thompson, St. Louis, Secretary-Editor; E. J. Schisler, St. Louis, Vice-President; B. Landis Elliott, Kansas City, Chairman of the Committee on Mental Health; Robert Mueller, St. Louis, Missouri State Chairman of the Procurement and Assignment Service; Raymond McIntyre, St. Louis, Acting Executive Secretary. Drs. Morris B. Simpson, Kansas City; G. V. Stryker, St. Louis; Joseph C. Peden, St. Louis, and Mr. Thomas O'Brien, St. Louis, officers of the Community Health League who were meeting at the Coronado, were guests of the Council at lunch.

Dr. R. L. Thompson was appointed Chairman of the Committee on Publication.

Mr. McIntyre presented the subject of Group Hospital Service for the entire membership of the Association to enable physicians in small communities to have the same privilege as those in larger towns. After discussion the Chairman was instructed to appoint a committee to study the question. The following committee was appointed: Drs. Joseph C. Peden, St. Louis; L. V. Ackerman, Columbia; W. F. Francka, Hannibal, and J. E. Stowers, Kansas City.

Approval of the educational program on rheumatic fever sponsored by the Metropolitan Life Insurance Company was expressed by the Council.

A request from the Mutual Benefit Insurance Company asking for a letter of endorsement was presented. It was decided that endorsement should originate from each county society at its discretion rather than from the state organization. The subject of group insurance was discussed and upon motion the Chairman appointed a committee, to study the subject and report to the Council, composed of Dr. Goodrich, chairman, and Dr. Lohr and Dr. Mantz.

The subject of gas rationing and attendance at scientific meetings was discussed and it was the consensus of opinion that any meeting at present necessarily will include study of civilian health needs in view of the limited medical care available and attendance would be classified as professional or occupational use of gasoline. It was agreed that Councilor District meetings need not be curtailed.

Fuel rationing in buildings in which patients are examined was presented as a problem facing the physician in some places. It was pointed out that in many instances this situation existed in buildings and institutions in which patients were cared for and might curtail the work of the physician in caring for the indigent patient.

Dr. Elliott, Chairman of the Committee on Mental Health, reported that the Committee had had a meeting and was studying the problem confronting institutions for mental patients in the state. He discussed several changes the Committee would like to have made in the present laws. The Council endorsed the work of the Committee and referred the Committee to the Community Health League for any legislative work it wished to have sponsored, with the suggestion that the Committee on Tuberculosis be consulted as to the tuberculosis hospitals in the state.

Mr. McIntyre reported that he had attended meetings of the following component societies: Jackson County, Eighth Councilor District, Clinton County, St. Francois-Iron-Madison-Washington-Reynolds County, Cape Girardeau County, Scott County, St. Louis Dermatological Society, Saline County, Platte County, North Central County, Nodaway-Atchison-Gentry-Worth Counties and Cass County. He also reported that he had attended the

Conference of Secretaries and Editors at the American Medical Association and had visited the Ohio and Indiana association headquarters.

It was reported that twenty-nine booths had been sold for exhibits at the 1943 Annual Session.

The Council approved the action of the Committee on Maternal Welfare and Infant Care in approving the program of the State Board of Health in regard to obstetric and pediatric care for wives of noncommissioned men in the service but felt that it should be discretionary to the individual physician and hospital as to participation.

The Treasurer's report was read as follows:

STATUS OF FUNDS

Treasurer's Account.....	\$16,416.23
Secretary's Account.....	470.39
Cash on Hand.....	19.72
Total.....	\$16,906.34

The Chairman appointed the following Committee on Appropriations: Drs. Bohrer, chairman; Smith and Campbell.

It was voted that a committee be appointed to study the Revision of the Constitution of Missouri, the Executive Secretary to be a member of the committee.

It was voted to allow the Committee on Amendments to the Constitution to secure legal advice on the Constitution of the Association.

The Acting Executive Secretary reported on the meeting he attended in Chicago covering the following subjects: Procurement and Assignment Service, industrial health and various problems that confront the medical profession. He made the following recommendations: That the Council meet more often at definite stated times or that there be a smaller advisory body; that a Committee on Public Relations be appointed; that closer cooperation between the Association and the State Board of Health be obtained. These recommendations were held for consideration at the next meeting of the Council.

It was suggested that the Acting Executive Secretary attend the meeting of the Council on Industrial Health to be held in Chicago in January.

Upon motion the following budget for 1943 was accepted following recommendation by the Committee on Appropriations:

BUDGET

Salaries	\$14,520.00
Printing of THE JOURNAL.....	8,000.00
Public Relations.....	1,000.00
Defense	1,000.00
Postage	1,100.00
Postgraduate Instruction.....	1,000.00
Printing and Stationery.....	750.00
Traveling Expense.....	1,100.00
Telephone and Telegraph.....	600.00
Rent of Office and Light.....	1,100.00
Meetings:	
Annual Session	
Council and Councilors' Expenses {	5,000.00
Committee Meetings	
Delegates to A. M. A. {	
Miscellaneous and General Expense.....	700.00
	\$35,820.00

Mr. O'Brien gave a short talk on the Community Health League and stated that the League expected to sponsor the "Doctor Prefix" bill and the "Basic Science Law" at the coming session of the legislature. He stated that the Greene County Chapter of the Community Health League had been outstanding in its work.

Dr. Mueller spoke briefly on the Procurement and Assignment Service and stated that he shortly would attend a meeting at the Seventh Corps Area headquarters and would furnish each Councilor a report on that meeting.

After brief reports by individual Councilors the Council adjourned.

W. A. BLOOM, M.D., Chairman.

On motion, duly seconded, the report was accepted.

DR. E. R. BROWN, UNIVERSITY CITY: I wish to submit an amendment to the By-Laws by adding a new section to be known as Section 4, of Chapter II, as follows:

Sec. 2. No person in the active practice of medicine in the State of Missouri shall appear on the program of the Missouri State Medical Association unless he or she is a member of the Missouri State Medical Association or an affiliated association or organization.

On motion, duly seconded, this amendment was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

DR. E. LEE DORSETT, ST. LOUIS: I have a resolution to offer and in explanation refer to the last paragraph of the report of the Committee on Maternal Welfare and Child Care.

Resolved, That inasmuch as the Committee on Maternal Welfare and Infant Care carries two conflicting subjects, and as there are a great many variances that tend to cause confusion, it is recommended that this Committee be made into two separate and distinct committees, one the Committee on Maternal Care, and one the Committee on Infant Care.

On motion, duly seconded, this resolution was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

DR. JAMES R. McVAY, KANSAS CITY: I wish to present a resolution and in that connection I would like to say that the medical profession has been criticized many times because it does not have a definite program. The slide I showed awhile ago showed how critical the situation in Missouri is as regards the osteopaths. It may be that the medical profession itself is personally at fault relative to that critical situation and I feel that perhaps something can be done in order to help correct it. The medical profession has a "Doctor Prefix Bill," has resisted all attempts of cultists to lower the standards of medical practice in Missouri and has promoted a Basic Science Law. This is all a very definite program but, as a completion of that program as it is presented now, I want to offer this resolution. It has to do with the education of more physicians for Missouri.

WHEREAS, The need for Doctors of Medicine is recognized as acute in the nation, state and country; and

WHEREAS, The University of Missouri School of Medicine is teaching only the first two years of medicine; and

WHEREAS, The problem of placing students for the completion of their medical education is becoming more and more difficult; and

WHEREAS, The City Council of Kansas City, Missouri, has offered the entire City Hospital facilities, consisting of over 1,000 bed patients for the establishment of the last two years of medical instruction in Kansas City, the buildings and equipment representing an investment of over \$3,500,000, as well as the expenses of the care of the patients for which the city expends \$1,000,000 per year; and

WHEREAS, The curators of the University of Missouri have approved this offer; and

WHEREAS, The University Board of Visitors, a representative fact-finding body, in its 1943 report has recognized the failure of the University to properly discharge its duty to the prospective students in medicine, the parents of these prospective students, and the citizens and taxpayers of the state and has strongly recommended that the University administration take immediate steps to correct this injustice, therefore be it

Resolved, That the House of Delegates of the Missouri State Medical Association, recognizing the foregoing facts and findings, strongly urges that the Administrative Officers of the University exercise all their abilities and energies to secure reasonable appropriations from the present State Legislature for the immediate establishment of the medical school's last two years of instruction at Kansas City, and be it further

Resolved, That a copy of these resolutions be sent to the Governor of the State of Missouri, to the curators of the University of Missouri, to the President of the University of Missouri, to each member of the Committee on Appropriations of the House of Representatives and of the Senate, and to the President of the General Alumni Association of the University of Missouri.

On motion, duly seconded, this resolution was referred to the Reference Committee on Medical Education and Public Welfare.

DR. JAMES STEWART, JEFFERSON CITY: I would like to present a resolution apropos of the activity of the State Department of Health that was indicated last fall through the guaranty from the United States Children's Bureau allowing the State Health Department to pay for obstetric and pediatric care of women and children of men who are in the armed forces. This ac-

tivity was carried on very satisfactorily and the guaranty was about \$13,000.00. Men were selected in the various societies as the eligibility officers to determine the men in the community who were ready to do this work. They were all in the medical profession and registered in Missouri. Applications were refused to osteopaths. The funds were exhausted and now Congress has passed a bill providing \$1,200,000.00 for this kind of service throughout the state. They are at this time adopting a new plan which, if carried out, would eliminate about 25 per cent of the properly registered physicians in Missouri from participating in this activity. I feel that it is absolutely wrong that any qualified physician in the State of Missouri should be barred from this practice through the provisions of this Act.

WHEREAS, The doctors of the State of Missouri have been cooperating with the State Board of Health of Missouri in carrying out the functions of a program initiated by the State Board of Health in cooperation with the United States Children's Bureau. This program, to provide obstetric and pediatric care for dependents of enlisted men in military service (Army, Navy, Coast Guard, Marine and Air Corps) was satisfactorily completed by the doctors of medicine licensed to practice medicine under the statutes of Missouri. This program was carried out with the approval of the Maternal Welfare and Infant Care Committee and the governing Council of the Missouri State Medical Association and the wholehearted support of the medical profession until funds allocated were exhausted, and

WHEREAS, We are now informed that the Congress has appropriated \$1,200,000.00 for grants to the states and territories for the period of April 1 to June 30, 1943, to be used by the states and territories in providing medical, nursing, hospital, maternity and pediatric care for the wives and infants of enlisted men in the armed forces. From this appropriation \$76,925.00 is available to Missouri to be expended in a program to care for these dependents under a plan submitted by the State Health Department of Missouri to the United States Children's Bureau and approved by the Secretary of Labor, and

WHEREAS, Section B, page 9, of Maternal and Child Hygiene Circular No. 13 sets forth the standards that must be met for medical services. These standards have been so designated as to reflect upon the training, ability and professional integrity of many reputable and competent physicians who are now licensed to practice medicine in Missouri, and

WHEREAS, The standards under which the original program was conducted met the legal standards of the practice of medicine and were acceptable to the Missouri State Medical Association, and

WHEREAS, The inclusion of standards of medical practice as set forth in Section B, page 9, of Maternal and Child Hygiene Circular No. 13 is incompatible with the general administrative policies both of the State Board of Health and the Missouri State Medical Association, and

WHEREAS, The exclusion of these physicians from participation in the program would create animosity toward the entire public health program, and

WHEREAS, The exclusion of these competent practitioners of medicine will deprive the patients eligible under such a program of the free choice of physician, and

WHEREAS, The exclusion of these competent practitioners will deprive the dependents of members of the armed forces of their valuable contribution toward the medical care of such dependents; now therefore be it

Resolved, That the Missouri State Medical Association instruct its Executive Secretary to inform the State Board of Health and the Commissioner of the State Health Department that inclusion of Standards of Medical Services, as set forth in Section B, page 9, of Maternal and Child Hygiene Circular No. 13, are not acceptable to the Missouri State Medical Association.

DR. E. LEE DORSETT, ST. LOUIS: Why are these men eliminated?

DR. STEWART: They are physicians from schools that have gone out of existence—not the diploma mill schools but schools that were not absorbed by some university. Some of the men have practiced medicine for years.

On motion, duly seconded, the resolution was referred to the Reference Committee on Resolutions.

Dr. O. S. Gilliland, Kansas City, invited the Association to meet in Kansas City in 1944. The invitation was accepted unanimously.

On motion, duly seconded, the House of Delegates adjourned.

Tuesday, April 20, 1943—Morning Session

The House of Delegates convened at 9:00 a. m., April 20, with the Speaker, Dr. F. W. Francka, Hannibal, presiding.

The Committee on Credentials reported a quorum present.

On motion, duly seconded, the reading of the minutes of the previous meeting was dispensed with.

Dr. H. M. Gilkey, Kansas City, read the report of the Reference Committee on Resolutions.

REPORT OF THE REFERENCE COMMITTEE ON RESOLUTIONS

The Committee has gone over these resolutions several times. With regard to physicians who are graduates of schools that are not functioning, but who are members of the Association, the Committee thinks they are entitled to the examination for obstetricians and pediatricians.

The Committee does not think it necessary that the dues of the Association be raised but recommends the assessment of \$4.00 per member for 1944.

The Committee recommends that the resolution of the National Conference on Medical Service be adopted and that Dr. McVay present it to the House of Delegates of the American Medical Association. The resolution follows:

WHEREAS, The medical profession is conscious of its responsibilities in providing timely and adequate medical services to all of the American people, irrespective of race, creed or financial status, and

WHEREAS, It believes it to be its duty and right to make available scientific facts, data and medical opinion with respect thereto, and to make known the role that the science and art of medicine plays in the daily lives of all Americans, and

WHEREAS, The medical profession of the United States is ready to offer constructive leadership in the advancement of medical principles that will further medical service to all of the people, and to preserve, not only the science and art of medicine, but the standards associated with the practice of medicine in America; now therefore be it

Resolved, That there is hereby created by this House of Delegates a Committee on Medical Service which shall be composed of the following members: (1) The President of the American Medical Association, ex-officio; (2) the immediate Past President of the American Medical Association; (3) the Secretary of the American Medical Association, ex-officio; (4) a member of the Board of Trustees of the American Medical Association, designated and selected by the Board of Trustees; (5) one member of the American Medical Association elected as hereinafter provided from each of the following nine geographical subdivisions of the United States: New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut. Middle Atlantic: New York, Pennsylvania, New Jersey. East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin. South Atlantic: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Puerto Rico. East South Central: Kentucky, Tennessee, Alabama, Mississippi. West South Central: Arkansas, Louisiana, Oklahoma, Texas, Panama Canal Zone. West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas. Mountain: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada. Pacific: Washington, Oregon, California, Alaska, Hawaii, Philippines, Pacific Islands.

The members of the House of Delegates from each of the foregoing geographical subdivisions of the United States shall elect one member of the American Medical Association to serve on said Committee; three of said nine members shall serve for one year; three shall serve for two years; and three shall serve for three years; the respective terms of office of the nine members first elected shall be decided by lot and thereafter the said terms shall be for three years each. The expiration date for the first one year term shall be at the next ensuing annual session of the House of Delegates of the American Medical Association. Expiration dates for all terms shall coincide with the dates of the regular annual session, of the House of Delegates of the American Medical Association. Be it further

Resolved, That the duties of the Committee on Medical Service shall be:

1. The making available of scientific facts and data and medical opinion with respect to timely and adequate rendition of medical care to the American people.

2. To integrate the activities of the Committee on Medical Service with respective state and county committees on like activities.

3. Establish relationships and cooperation with other allied groups who are likewise engaged in the rendition of medical care, in its various branches, to the American people.

4. The Committee on Medical Service shall hold at least two meetings per year; one shall be held at the time and place of the Annual Meeting of this House of Delegates; the other meeting shall be held in the City of Washington, D. C., and called at the direction of the Chairman; and such other meetings as may be necessary to be called by the Chairman upon the written request of the majority of the Committee.

5. The Committee shall forthwith and annually thereafter elect from its own membership a Chairman and a Vice Chairman.

6. The Committee on Medical Service shall establish and maintain an office in Washington, D. C., and shall further be empowered and directed to employ a full time Executive Director, who shall act as Secretary of the Committee and whose duties shall be specified by the Committee. Such Executive Director shall be a physician who has been actively engaged in the private practice of medicine for not less than five years during the previous ten years and furthermore, be informed and qualified to act as a Liaison Representative of said Committee.

7. The Committee on Medical Service is further authorized to hire such legal and administrative help as is necessary. Be it further

Resolved, That the Committee on Medical Service shall submit a budget for its expenses for the fiscal year to the Board of Trustees of the American Medical Association and it is the consensus of opinion of this House of Delegates that the Board of Trustees shall forthwith appropriate not less than 50 cents nor more than \$1.00 for each member of the American Medical Association so that adequate funds will be available for such Committee to carry out its work on an honorable and ethical plane in keeping with the standards of American medicine. Be it further

Resolved, That this Committee shall submit an annual report to the House of Delegates at their Annual Meeting. And be it further

Resolved, That this resolution upon its adoption by the House of Delegates shall be forthwith transmitted to the Board of Trustees with the request that the Board of Trustees report back its action to the House of Delegates within twenty-four hours as provided for in the Constitution and By-Laws of the American Medical Association.

On motion, duly seconded, the report was adopted.

Dr. F. T. H'Doubler, Springfield, read the report of the Reference Committee on Miscellaneous Affairs.

REPORT OF THE REFERENCE COMMITTEE ON MISCELLANEOUS AFFAIRS

The Committee, after studying the complete report of the Committee on Medical Economics, wishes to compliment the Committee for its work and report and recommends the appointment by the President of a Committee on Postwar Planning, the Committee to consist of three members with, in addition, the Executive Secretary acting as a member ex-officio.

It is further recommended that this Committee on Postwar Planning be empowered with the approval of the Council to incur expenses in making a survey and carrying on other pertinent activities.

On motion, duly seconded, the report was adopted.

Dr. John S. Knight, Kansas City, read the report of the Reference Committee on Medical Education and Public Welfare.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND PUBLIC WELFARE

After careful examination of the resolution recommending the expansion of the University of Missouri School of Medicine to a four year course, the Committee unanimously endorses the resolution. It is further suggested that immediate and strong efforts by all concerned be developed for the accomplishment of this endeavor.

On motion, duly seconded, the report was adopted.

Dr. Robert Mueller, St. Louis, reported on the Procurement and Assignment Service in Missouri.

REPORT ON PROCUREMENT AND ASSIGNMENT SERVICE

I would like to make a verbal report at this time. You probably know that last year Missouri furnished 114 per cent of its quota. As a matter of fact, on October 1, it had reached 100 per cent. Now, the question comes, What is expected of the State of Missouri in the coming year, as far as our membership is concerned? The reason I am talking to the delegates is that you may go back to your respective counties and disseminate this information.

The quota for Missouri for 1943 is 254 physicians in the private practice of medicine. That does not include resident interns. The quota for January, February and March was 53. It is expected to get twenty men per month from Missouri. In the month of January 84 per cent of that quota was furnished; in February five physicians were commissioned from the State of Missouri, which is much below the quota, and apparently something has happened throughout the entire United States. One must remember that Procurement and Assignment Service is purely voluntary service; there is no compulsion that can be exerted, except that the Army can draft the number that the Selective Service Board say are available and essential. The Draft Board has the sole power to induct a man; no one else has that power. One can appeal from the decision of the Draft Board, but that is all.

I received a letter from Dr. Paul C. Barton, Assistant Executive Officer, War Manpower Commission. The text of the letter follows:

"Last week I instituted new recruiting procedures in the New England area and the Directing Board decided to establish the same procedure in the Middle West.

"I would like to go over this procedure with you on Friday, the 23rd, for the purpose of adjusting it properly to the situation in the State of Missouri and preparing the plan for presentation at a meeting on Saturday, the 24th. It would be appreciated if we could have for that meeting, the President of the State Medical Association, and the Presidents of the County Societies in those counties in which most of the recruiting will take place as well as the representatives of the Procurement and Assignment Service from these same counties.

"My schedule is very closely arranged and therefore, it would be appreciated if these meetings could be scheduled as indicated."

The fact remains that about the only places from which physicians can be obtained are St. Louis or Kansas City. As far as rural Missouri is concerned, I question very much whether any more physicians will be taken. There will be a new recruitment procedure. What it will do I do not know, but we will know something more definite after this meeting with Dr. Barton.

Now what about the problem of getting physicians? You probably read the editorial in the *Journal of the American Medical Association* recently, and yesterday I received an anonymous letter enclosing this clipping. As a rule, I do not pay any attention to anonymous letters, but I will read this to you because I want to deny some of the things in it. This letter is a protest against the procedure. This is written by the Editorial Board, *Norfolk Medical News*.

"Physicians Must Volunteer From Large Cities

"To the Editor (*Journal of the American Medical Association*):

"The editorial entitled 'Physicians Must Volunteer From Large Cities' in the March 27 issue of *The Journal* states that 'the responsibility' for the lagging in procurement of medical officers 'rests unquestionably on the failure of young available physicians in the large cities of the country, particularly those of the eastern seaboard, to volunteer' and for a solution recommends 'the pressure of public opinion.'"

The only way that procurement and assignment can work is according to a man's feeling. There is no compulsion, it is purely a voluntary matter on the part of the profession. This is the only profession that has that privilege. We have our own Board doing these things, and we are anxious that it continue as a voluntary matter so that we can say to the people of the United States that the physicians are coming in voluntarily. That is the only way it can be worked.

"But why are available physicians from the cities not volunteering? These men are no less patriotic than

their country cousins and are just as eager to do their part. They resent, however, the fact that many physicians within the draft age are considered 'essential' for hospital work, . . ."

That is not true in the State of Missouri, with the exception perhaps of a few roentgenologists and laboratory men, and I think we will agree that some of these are essential and most of them are over 45. As far as a man being essential because he takes a lot of patients to a hospital, there is not a single man in Missouri who has been exempted because of that.

" . . . part time teaching, . . ."

I know of no physician in Missouri who was exempt because of that. I know of some who are working for the government, but part time research work is out. Full time research work is being greatly curtailed, but there is no such thing in Missouri as "part time teaching." It is true that some young men have been declared essential for teaching. There are certain things that are taught in the medical schools of Missouri by young men, but the people there are trying to do what is right. I think they are trying to cooperate, but there are some young men who are essential. We must be broad about this whole subject. We cannot say that just because a man is under 45 he should go into the service. Some men under 45 must stay back.

" . . . part time research or part time industrial work . . ."

We received orders from headquarters that a man who is the medical director of a big plant engaged in defense work should be declared essential, and it is true that a plant like the Remington Arms plant at Kansas City, or the big plants around St. Louis, need the younger men to do some of the work, but most of the young men who have been declared essential are physically incapacitated. You may say they look healthy, but we know that recently many of these men have been declared physically incapacitated. There are certain conditions that have been declared incapacitating, such as hay fever and asthma, by the Surgeon General's department, and we cannot do anything about it. But when such a man is declared incapacitated I do not think we should criticize him. It is the Army that is doing it and not the man himself. At the beginning of the War it was contemplated that such a man be given a certificate, but that has been abandoned. Why, I do not know. These things are determined at the headquarters of Procurement and Assignment Service, and we must look at it in a broad way, and as a medical profession try to secure our quota of physicians for the coming year. The Army says it needs these men. We do not know. We try to follow orders when we receive a request for a certain number of physicians. You may say that Jack Jones down at some camp is sitting around—maybe dozens of them. We do not know whether they are or not, but if the Army tells Procurement and Assignment that they need a certain number of physicians, we are supposed to fill that quota. That is all we know.

Now we have the problem of rural Missouri and how many physicians it will take, if any. We need the cooperation of everyone to do this work. We must depend upon local committees to get the information relative to the situation in their respective counties. We must forget professional jealousies when these things are to be considered. We have received letters from physicians saying more young men should go into service, and then again we receive letters saying, if the young men go into service what will become of the rural practice? The older men are too old, they cannot take it. That is true—some young men must stay there. But do not forget that the osteopath situation is closely connected with this. When we take young men from a community, immediately an osteopath comes in, and these people will not be idle as the years go by. The older men are overworked and will break down, and when they break down the osteopaths will come in. These things are all very intimately connected, especially as pertains

to the medical profession and what will happen when the men come back. Let us look at it from that standpoint.

I am sure that the medical profession has made a wonderful record in this War, when one considers that there are now approximately 50,000 physicians out of about 130,000 now in the Service, and most of these are under 45.

We must start the question of postwar planning, and the matter of the rural physician and what is to be done in that situation. There is no question about it that unless we do something about rural medicine in Missouri the problem will be a good deal more serious. We have made a survey which shows that 60 per cent of these physicians are more than 60 years old and in ten years from now will be out of practice in rural Missouri. That is a problem that I think should be considered by the Committee on Rural Medicine and a report made to this body.

On motion, duly seconded, the report was accepted with thanks.

Dr. B. Landis Elliott, Kansas City, read the report of the Reference Committee on Amendments to the Constitution and By-Laws.

REPORT OF THE REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

The Committee has studied carefully the proposed amendments to the Constitution and By-Laws and recommends that the following amendments to the By-Laws be adopted:

Amend Chapter IV, Sec. 6, which reads:

Sec. 6. Delegates shall not be eligible for election to any of the offices named in the Constitution, except that of Councilor.

to read as follows:

Sec. 6. Delegates shall not be eligible for election to any of the offices named in the Constitution except that of Councilor, Speaker and Vice Speaker of the House of Delegates. The Speaker and Vice Speaker shall not serve more than three consecutive terms.

Amend Chapter VI, Sec. 12, which reads:

Sec. 12. The Council shall be empowered to elect an Executive Secretary who need not be a member of the Missouri State Medical Association, who shall perform such duties as the Council may designate and who shall receive such salary and serve for such period and under such conditions as the Council may determine.

to read as follows:

Sec. 12. The Council shall be empowered to elect an Executive Secretary and Assistant Executive Secretary and such other personnel as may be necessary, who need not be members of the Missouri State Medical Association, each of whom shall perform such duties as the Council may designate and receive such salary and serve for such periods and under such conditions as the Council may determine.

Chapter VII, Sec. 3, which reads:

Sec. 3. The Committee on Public Policy shall consist of three members, and the President and President-Elect, and such other members whose experience suggests their value in emergency, to be called by the chairman of the committee. There shall be a joint meeting of this committee and an auxiliary committee, as provided for in Chapter XI, Sec. 19, of these By-Laws, held annually, as may be ordered on the call of the Chairman or three members of the State Committee. The chairman of the State Committee, and in his absence the President, shall act as chairman at the joint

committee meeting. Under the direction of the State Committee, the joint committee shall represent the Association in securing and enforcing legislation in the interest of public health and of scientific medicine.

should be amended to read as follows:

Sec. 3. The Committee on Public Policy and Public Relations shall consist of three members, and the President and President-Elect, and such other members whose experience suggests their value in emergency, to be called by the chairman of the committee. There shall be a joint meeting of this committee and an auxiliary committee, as provided for in Chapter XI, Section 10, of these By-Laws, held annually, as may be ordered on the call of the chairman or three members of the State Committee. The chairman of the State Committee, and in his absence the President, shall act as chairman at the joint committee meetings. Under the direction of the State Committee, the joint committee shall represent the Association in promoting relations between the profession and the public, and in procuring public cooperation in the interests of public health and scientific medicine.

Amend Chapter VII, Sec. 1, which reads:

A Committee on Public Policy

to read:

A Committee on Public Policy and Public Relations.

also

A Committee on Maternal Welfare and Infant Care

to read:

A Committee on Maternal Welfare

A Committee on Infant Care.

Amend Chapter XI, Sec. 10, which reads:

Sec. 10. Each county society shall appoint or elect one of its members as a member of the auxiliary committee on Public Policy, and the county society secretary shall send his name and address at once to the Secretary of this Association. The Committee on Public Policy of this Association shall formulate the duties of the auxiliary committee and supply each member with a copy. The auxiliary committeemen shall be accountable to their county societies and to the Council for prompt response to and continued cooperation with the Committee on Public Policy of this Association.

by adding the words "and Public Relations" after the words "Public Policy" in each of the three places where they appear.

Amend Chapter VII, Sec. 5, which reads:

(c) Any member desiring to avail himself of the provisions of this section shall, within three days after any demand has been made upon him, present his request to the Secretary of this Association, together with a complete history of the case and the services therein rendered. The committee shall then, with the aid of its counsel, advise said member up to the time of the institution of suit. Should suit be filed, a copy of the plaintiff's petition must be immediately forwarded to the Secretary of this Association. The committee shall thereupon provide such medical and legal services of counsel as may be necessary, but in no case shall the cost to this Association be in excess of \$300.00 for all such services. The Association does not obligate itself to pay, nor shall it pay in whole or in part, any damages agreed upon in compromise, or awarded after trial, nor shall it pay any of the expenses incident to the taking of depositions nor any of the costs of court. (As amended, 1930)

so that it will read:

(c) Any member desiring to avail himself of the provisions of this Section shall, within three days after any

demand has been made upon him by any claimant, present his request to the Secretary of this Association, together with a complete history of the case and of the services performed. The committee shall then, with the aid of counsel, advise said member, and should suit be filed, a copy of the plaintiff's petition and the summons must be forwarded immediately to the Secretary of this Association. The committee shall thereupon provide such legal services as may be necessary, but in no case shall the cost to this Association be in excess of \$300.00. The Association shall not be obligated to pay, nor shall it pay, either in whole or in part, any sum agreed upon in compromise, nor any judgment or part thereof, nor shall it pay any of the costs of taking depositions nor any court costs.

Amend Chapter XI, Sec. 5, which reads:

Sec. 5. In hearing appeals the Council may admit oral or written evidence as in its judgment will most fairly present the facts; but in the case of every appeal, both as a board and as individuals, the councilors shall, preceding all such hearings, make efforts at conciliation and compromise.

by striking out all of the Section after the words "the facts," so that it will read:

Sec. 5. In hearing appeals the Council may admit oral or written evidence as in its judgment will most fairly present the facts.

Amend Chapter XI, Sec. 3, by adding the following:

The Council may, upon the request of a component society, waive the dues of any member in good standing for such a period as the member is serving in the Armed Forces of the United States of America, the United States Public Health Service, or similar service with any of the allies of the United States, and for six months thereafter.

Amend Chapter XI, Sec. 11, which reads:

Sec. 11. The State Association, or a county society in manner approved by the State Association, may undertake and coordinate all sickness, care of indigents and low income groups through agreements with public officials and with physicians and others, and by the use of contributions, cooperative funds and other means, provided only that free choice of physicians within such agreements shall be retained and that responsibility of physician to patient shall remain as though the dealings were direct between physician and patient.

so that it shall read:

Sec. 11. Any county component society, in a manner approved by the State Association, or the State Association with the consent of the county society or societies affected, may undertake, organize and put into effect plans for the medical care of indigent persons or indigent groups and low income groups, by agreements with physicians, public officials or others and by the use of contributions, cooperative funds or other means; provided, however, that a free choice of the available and participating physicians in that territory shall be allowed to the patient and that all relationships, legal or otherwise, between the physician and the patient shall be and remain as though it were strictly an individual employment.

Add a new Section to Chapter II of the By-Laws, to be known as Section 4, which shall read as follows:

No person in the active practice of medicine in the State of Missouri shall appear on the program of the Missouri State Medical Association unless he or she is a member of the Missouri State Medical Association or an affiliated association or organization.

B. LANDIS ELLIOTT, Chairman.
OTTO KOCH,
R. W. KENNEDY.

Nomination of President-Elect

Dr. R. E. Schlueter, St. Louis, nominated Dr. Curtis H. Lohr, St. Louis, for President-Elect. The nomination was seconded by Dr. Joseph C. Peden, St. Louis.

On motion, duly seconded and carried, the Secretary was instructed to cast the unanimous ballot of the House of Delegates for Dr. Curtis H. Lohr, St. Louis, for President-Elect. The Secretary cast the unanimous ballot of the House for Dr. Curtis H. Lohr, St. Louis, as President-Elect of the Missouri State Medical Association for the ensuing year and the President declared Dr. Lohr so elected.

Dr. Lohr was escorted to the platform by Drs. O. S. Gilliland, Kansas City, and Wallis Smith, Springfield.

DR. CURTIS H. LOHR, ST. LOUIS: It goes without saying that I am deeply appreciative of the honor which you have conferred upon me this morning. I am cognizant of the fact that it is the highest honor which the medical profession of Missouri can bestow upon one of its members. I am sincerely grateful. I am particularly appreciative of the fact that my name was placed in nomination by my old friend and associate in St. Louis. Usually it is difficult to fool your friends and your associates, but apparently I have succeeded, and I repeat that in all sincerity I am deeply grateful that they have seen fit to place me in line for this honor. I said that it might be questionable wisdom to nominate me for this high office at this time because, as you probably know, it will not be very long before I will be leaving for Army service, and if I am not back in time to serve you as President next year, in accordance with the provisions of the By-Laws, I am sure that someone else in that event will be found to carry on in my place. The fact that I was placed in nomination regardless of that contingency would seem to indicate that perhaps some of the profession and some of our citizens feel that maybe this war will not last very long. I cannot agree with them, but I will be glad to be proved wrong, and will be happy and glad to get back in time to assume the duties of that position.

In retrospect, viewing the work of the Missouri State Medical Association in which I have played a little part off and on for the last sixteen or eighteen years, I am particularly impressed with the rejuvenation that has taken place in the interest of our membership at large in the affairs of our Association and in the position of the organized profession in this state. I think it has been very encouraging to all who have attempted to serve you in the last five or six years, the increase of interest on the part of our members. It has been timely because at no time in the history of the medical profession has it been encroached upon and attacked as it has in the last few years, and the very struggle that is now going on in Jefferson City indicates the timeliness of the awakening of the medical profession to the danger confronting it as well as confronting the public health of the citizens of the State of Missouri. Of course the officers and the members of the Council have a part to play in rallying the organized profession, a small part, but it has certainly been a pleasure, and I shall never forget the response that we have received from you.

While improvement has been made, however, the fact remains that there is still plenty of room for further effort. It is encouraging, indeed, that as far as the Community Health League is concerned, it has been able to obtain more than one thousand members who have taken an active part in legislation. But, on the other hand, it is discouraging to realize that that is, after all, only a small percentage of the membership of the Missouri State Medical Association. I am going to ask you, in the absence of those who are and will have the privilege of serving in the armed forces, not to relinquish your efforts, not to give up the fight, for a member of the profession who stays at home and does not continue by personal effort to support the medical profession in guarding the public health in the State of Missouri is just as good as no member at all. Someone

said that the lack of interest on the part of some of our profession is due to their preoccupation with their own interests. That may be true in some instances but, essentially, I believe that the limited response we have had should be attributed to the fact that we have not made as much of an effort to inform these men as to what is at stake and what must be done in order to gain the final victory against the continuous inroads which are being made against public health and against the standing of the medical profession in the State of Missouri. A great deal has been accomplished, and as each letter goes out attempting to arouse those men there is a response from the members that indicates that this educational program on behalf of our members should be carried on so that when the next battle starts two years hence we will be close to having a complete representation of the members of the profession in the Community Health League.

I heard some men say the other day that they thought everything was under control; that this attempt, this onslaught against the public health in the State of Missouri was defeated, was stopped. And while it does look as if we may be able to stop the efforts of the cultists, at the same time we must realize that they have very formidable leadership and that they will not rest. This is an all-out fight against the interests of the medical profession, and, while our ranks are depleted, you may rest assured that while in 1943 we fought at Bataan, we will fight at Corregidor in 1945 if this war is not over by that time. I therefore urge everyone of you to make personal efforts to obtain recruits who are willing to support, financially and actively, by personal effort, the Community Health League and its efforts to protect the public health, and to protect the interests of the medical profession, which are synonymous with proper public health in the State of Missouri.

I also have been impressed during our efforts to stop this legislative onslaught, that we are handicapped to some extent in appearing before various groups by the fact that in the past the fight has been carried on by doctors of medicine, and to some extent that has been a disadvantage, because we are now hearing that the physicians are working for their own selfish interests. I believe that those of you who in the last ten or fifteen years have worked in your behalf are impressed with the fact that regulatory legislation which is fair and equitable to all will only be affected when, in addition to the medical profession, we can convince the general public, the representatives of civilian groups, non-professional groups, that we are not selfish but are sincerely interested and are making these efforts on behalf of the public health of the citizens of the State of Missouri. If we can convince the citizens at large of that fact, these laws in which we are interested will soon be enacted into law. That means that we should undertake a well planned, state wide educational program not only among our members, but among the laity of this state. As I said before, when the lay groups, the civilian groups who represent the citizens, will sponsor and back up our program, then I believe the battle is won.

I should also like to compliment the officers and Council and our members for their adoption of a policy that while as citizens of this state we may have certain political convictions in our private life, that as physicians we should be one, and that regardless of a Republican or a Democratic administration, we will support those who appreciate the importance of public health, those who have shown by their performance that they appreciate what the medical profession is doing in the care of the indigent sick, and those who have proven by their actions that they are equal to their public trust. Likewise, I believe we should strongly oppose those who have not measured up to expectations. It is deplorable that we in the State of Missouri, in our counties and in our cities, public health departments and public institutions are still subjected to political interference. It is a disgrace, and to some extent it is a reflection upon the medical profession that in the State

of Missouri our public institutions were inadequately staffed, prior to the war, and that the patients in those institutions for a time, in the interest of a false boast of economy, were deprived of even adequate food. I believe that could not have happened if each and every one of us had taken more interest and an active part. I think it is to our own welfare and our own standing in the community that in the future we take a more active stand and participate to a greater extent in the efforts to overcome this sort of condition.

I believe that with the officers who will be active for the duration, the affairs of our Association will be in good hands. If and when I came back I assure you that in whatever capacity it shall be my lot to serve, I will certainly attempt to merit the confidence and recognition which you have so kindly extended to me today. I thank you sincerely.

REPORT OF THE COMMITTEE ON NOMINATIONS

For Vice Presidents: Dr. Dudley A. Robnett, Columbia; Dr. Buford G. Hamilton, Kansas City; Dr. J. I. Byrne, St. Joseph.

For Delegates to the American Medical Association: For Delegate, Dr. Robert E. Schlueter, St. Louis; alternate, Dr. J. F. Jolley, Mexico. Delegate, Dr. James R. McVay, Kansas City; alternate, Dr. H. L. Kerr, Crane. For Speaker of the House of Delegates: Dr. W. F. Francka, Hannibal; Vice Speaker of the House of Delegates, Dr. John Green, St. Louis.

On motion, duly seconded, these officers were declared elected.

The Secretary reported the results of the election of Councilors as follows:

2nd District	Dr. H. B. Goodrich, Hannibal
4th District	Dr. R. B. Denny, Creve Coeur
6th District	Dr. R. W. Kennedy, Marshall
7th District	Dr. H. L. Mantz, Kansas City
8th District	Dr. Wallis Smith, Springfield
10th District	Dr. Paul Baldwin, Kennett

Dr. Curtis H. Lohr, St. Louis, requested the unanimous consent of the House of Delegates to present a resolution, which was granted, and the following resolution was presented:

WHEREAS, The Selective Service System of the State of Missouri has ruled that the physical fitness of our selectees must be determined in the most competent and careful manner and, that in order to attain this objective only doctors of medicine are to be considered qualified for this important and responsible work, and

WHEREAS, The adoption of this important policy and principle was advocated and made possible by the outstanding leadership of Lt. Col. W. L. Gist, M.C., who in his capacity as Medical Director and Adviser to the Selective Service System of Missouri has not only strictly enforced this regulation but has steadfastly and courageously opposed the determined and persistent efforts of cultists and other irregular practitioners to be appointed examiners for the various draft boards throughout this state, and

WHEREAS, As a result of this policy and regulation of the Missouri Selective Service System the determination of the physical fitness of the selectees in our state has been conducted in an efficient and equitable manner, therefore be it

Resolved, That the House of Delegates of the Missouri State Medical Association assembled at this, the Eighty-sixth Annual Session, officially commend the efficient work and accomplishments of the officers of the Missouri Selective Service System and that it give special recognition and express its appreciation to Lt. Col. W. L. Gist, M.C., for his able, courageous leadership and invaluable services to our state and nation in his capacity as Medical Director and Adviser of the state's Selective Service System, and be it further

Resolved, That a copy of this resolution be presented to Colonel Earp, the Director of the Missouri Selective Service System, Gen. Leonard A. Hershey, the National Director of the Selective Service System and to General James L. Magee, the Surgeon General of the United States Army, and to Admiral Ross McIntire, the Surgeon General of the United States Navy.

On motion, duly seconded, this resolution was adopted.

On motion, duly seconded, a vote of thanks was extended to the St. Louis Medical Society for the entertainment provided and to the officers at the Station

Hospital, Jefferson Barracks, for the invitation to inspect the hospital and for lunch following the session.

Installation of Dr. A. W. McAlester, Jr.

Dr. A. W. McAlester, Jr., was escorted to the platform by Dr. James Stewart, Jefferson City, and installed by Dr. H. L. Kerr, Crane.

Dr. A. W. McAlester, Jr., Kansas City, made the following appointments to committees:

Scientific Work: Harry C. Lapp, Kansas City, Chairman; Jess V. Bell, Carl T. Schutz, Carl R. Ferris, Kansas City.

Postgraduate Course: M. Pinson Neal, Columbia; G. T. Bloomer, St. Joseph; Ralph E. Duncan, Kansas City.

Public Policy and Public Relations: Robert Mueller, St. Louis; R. M. James, Joplin; Donald M. Dowell, Chillicothe.

Defense: O. B. Zeinert, St. Louis; L. P. Forgrave, St. Joseph; Roland Kieffer, St. Louis.

Medical Education and Hospitals: Dudley S. Conley, Columbia; F. L. Kneibert, Poplar Bluff.

Cancer: Wm. E. Leighton, St. Louis; Paul F. Cole, Springfield.

Medical Economics: George A. Aiken, Marshall; C. A. W. Zimmermann, Cape Girardeau.

Mental Health: B. Landis Elliott, Kansas City, Chairman; Frank M. Grogan, St. Louis.

Maternal Welfare: E. Lee Dorsett, St. Louis, Chairman; H. B. Goodrich, Hannibal; Buford G. Hamilton, Kansas City.

Infant Care: Park J. White, St. Louis, Chairman; E. H. Schorer, Kansas City; Damon Walthall, Kansas City; U. J. Busiek, Springfield; H. E. Petersen, St. Joseph; W. Roger Moore, St. Joseph; Harry M. Gilkey, Kansas City.

Health and Public Instruction (McAlester Foundation): Frank G. Nifong, Columbia; Grayson Carroll, St. Louis.

Constitution and By-Laws: G. T. Bloomer, St. Joseph; Joseph C. Peden, St. Louis.

Fractures: Frank D. Dickson, Kansas City, Chairman; J. Albert Key, St. Louis; J. R. Elliott, Kansas City; W. H. Bohne, St. Louis.

Conservation of Eyesight: C. Souter Smith, Springfield, Chairman; Robert S. Minton, St. Joseph; George A. Hornback, Hannibal; G. J. Tygett, Cape Girardeau; Philip S. Luedde, St. Louis; W. M. Bickford, Marshall.

Control of Venereal Disease: V. Rogers Deakin, St. Louis, Chairman; Arthur W. Neilson, St. Louis.

Industrial Health: E. C. Funsch, St. Louis, Chairman; J. E. Castles, Kansas City.

Physical Therapy: J. L. Washburn, Versailles.

Study of Medical Practice Laws: J. Milton Singleton, Kansas City, Chairman; T. W. Cotton, Van Buren; E. D. James, Joplin; O. C. Gebhart, Oregon; M. Pinson Neal, Columbia; E. L. Spence, Kennett.

Medical Legal Affairs: Downey Harris, St. Louis.

Tuberculosis: E. E. Glenn, Springfield, Chairman; George D. Kettelkamp, Koch; J. A. Stocker, Mt. Vernon.

Rural Medicine: H. L. Kerr, Crane, Chairman; O. A. Sale, Neosho; R. E. Breuer, St. James.

Medical Military Affairs: H. B. Stauffer, Jefferson City, Chairman; Charles D. Humberd, Barnard; E. Kip Robinson, Kansas City; J. E. Stowers, Kansas City; T. P. Brookes, St. Louis.

Study of Cardiac Disease: A. Graham Asher, Kansas City.

Adviser to Woman's Auxiliary: H. L. Mantz, Kansas City.

On motion, duly seconded, these appointments were approved.

Dr. E. R. Brown, University City, with consent of the House of Delegates, moved that the Council confer with insurance companies in regard to pension insurance on office employees of the State Association and

report their findings to the House of Delegates at the next Annual Session.

On being seconded, the motion was passed.

On motion, duly seconded, the House of Delegates adjourned *sine die*.

MEETING OF THE COUNCIL

Jefferson Hotel, St. Louis

Sunday, April 18, 1943

The Council of the Missouri State Medical Association met at the Jefferson Hotel, St. Louis, at 12:00 noon, April 18, 1943. Dr. W. A. Bloom, Fayette, Chairman, presided. Those present were Drs. A. S. Bristow, Princeton; H. B. Goodrich, Hannibal; Curtis H. Lohr, St. Louis; C. E. Fallet, DeSoto; W. A. Bloom, Fayette; A. J. Campbell, Sedalia; H. L. Mantz, Kansas City; Wallis Smith, Springfield; E. C. Bohrer, West Plains; E. J. Nienstedt, Sikeston, Councilors; H. L. Kerr, Crane, President; A. W. McAlester, Jr., Kansas City, President-Elect; R. L. Thompson, St. Louis, Secretary-Elector; C. E. Hyndman, St. Louis, Treasurer; M. B. Simpson, Kansas City, Chairman, Committee on Public Policy; E. J. Schisler, St. Louis, Vice President; Robert Mueller, St. Louis, Chairman, Procurement and Assignment Service; J. A. Gray, Rock Port, member of the House of Representatives of Missouri; Otto Koch, St. Louis; Raymond McIntyre, St. Louis, Acting Executive Secretary.

The Constitutional Convention was discussed and upon motion by Dr. Kerr, seconded by Dr. Bohrer, it was decided that the Committee on Public Policy act as a committee of the Association. It was voted that the Committee should have authority to consult an attorney.

Dr. Gray spoke briefly on legislative matters.

Dr. Smith opened a discussion on the problem of men in the armed forces having places to practice when they returned.

Dr. Mantz presented slides showing the voting of the General Assembly on recent legislation.

Dr. Mueller announced that Dr. Paul C. Barton, Washington, D. C., would be in Missouri for discussion of the Procurement and Assignment Service on April 23 and 24.

Monday, April 19, 1943—First Meeting

The first meeting of the Council convened at a luncheon at noon, April 19, 1943, the Chairman, Dr. W. A. Bloom, Fayette, presiding. Those present were Drs. H. B. Goodrich, Hannibal; C. E. Fallet, DeSoto; W. A. Bloom, Fayette; A. J. Campbell, Sedalia; H. L. Mantz, Kansas City; E. C. Bohrer, West Plains; E. J. Nienstedt, Sikeston, Councilors; O. S. Gilliland, Kansas City, President of the Jackson County Medical Society; Raymond McIntyre, St. Louis, Acting Executive Secretary.

The Chairman appointed Drs. E. C. Bohrer, West Plains; Wallis Smith, Springfield; C. E. Fallet, DeSoto, as an Auditing Committee.

The report of the Treasurer was referred to the Auditing Committee.

After discussion, Mr. McIntyre was instructed to place \$5,000.00 of the Association's funds in Series G Government Bonds.

Individual Councilors reported upon the work in their respective districts.

Tuesday, April 20, 1943—Second Meeting

The second meeting of the Council convened April 20 following the final meeting of the House of Delegates, with Dr. W. A. Bloom, Fayette, Chairman, presiding. Those present were Drs. A. S. Bristow, Princeton; H. B. Goodrich, Hannibal; Curtis H. Lohr, St. Louis; R. B. Denny, Creve Coeur; W. A. Bloom, Fayette; R. W. Kennedy, Marshall; H. L. Mantz, Kansas City; Wallis

Smith, Springfield; E. C. Bohrer, West Plains, Councilors; A. W. McAlester, Jr., Kansas City, President; R. L. Thompson, St. Louis, Secretary-Editor; C. E. Hyndman, St. Louis, Treasurer; Raymond McIntyre, St. Louis, Acting Executive Secretary; John Williams, State Board of Health, Jefferson City.

The election of officers for the year resulted as follows: Secretary-Editor, Dr. R. L. Thompson, St. Louis; Treasurer, Dr. C. E. Hyndman, St. Louis; Executive Secretary, Raymond McIntyre, St. Louis; Consultant, E. H. Bartelsmeyer, St. Louis; Assistant Editor, Helen Penn, St. Louis; Chairman of the Council, Dr. W. A. Bloom, Fayette; Vice Chairman of the Council, Dr. H. B. Goodrich, Hannibal; Secretary of the Council, Raymond McIntyre, St. Louis.

Dr. E. C. Bohrer reported that the Auditing Committee approved the report of the Treasurer.

The Committee on Publication was appointed as follows: Drs. R. L. Thompson, St. Louis, Chairman; Vincent T. Williams, Kansas City; M. H. Shelby, Cape Girardeau; R. C. Haynes, Marshall.

Dr. H. L. Mantz, Kansas City, was appointed Chairman of the General Committee on Arrangements for the 1944 Annual Session, and Drs. A. S. Bristow, Princeton, and R. W. Kennedy, Marshall, members.

The following committee was appointed to work with the Executive Secretary in obtaining information on insurance on employees of the Association: Drs. H. B. Goodrich, Hannibal; Wallis Smith, Springfield; A. S. Bristow, Princeton.

Dr. McAlester spoke on the advisability of sectional meetings, preferably on tropical diseases, with guests from the Army and Navy Medical Corps to present the subjects. A committee to follow up and arrange such meetings was appointed, composed of Drs. H. L. Mantz, Kansas City; H. B. Goodrich, Hannibal, and Wallis Smith, Springfield.

Dr. H. L. Mantz discussed the follow-up work with rejectees and it was suggested that Mr. McIntyre get in touch with the Missouri Tuberculosis Association and cooperate in this work.

On motion the Council adjourned *sine die*.

MINUTES OF THE GENERAL MEETING

The scientific sessions were held in the Gold Room of the Jefferson Hotel, St. Louis, on April 19. Dr. H. L. Kerr, Crane, President, and Dr. R. M. James, Joplin, Vice President, presided at the sessions.

Monday, April 19, 1943—Morning Session

Sulfonamides:

Mode of Elimination, Henry L. Barnett, M.D., St. Louis.

Use in Venereal Disease, W. S. Sewell, M.D., Springfield.

Use in the Army, Major Marvin G. Flannery, M.C., and Captain Arie C. H. Van Ravenswaay, M.C., Jefferson Barracks.

Burns:

Physiologic Problems, Robert Elman, M.D., St. Louis. Local Immediate Treatment, F. T. H'Doubler, M.D., Springfield.

Reparative Treatment, Earl C. Padgett, M.D., Kansas City.

Poliomyelitis:

Epidemiology, Cultivation and Transmission, Lloyd R. Jones, Ph.D., St. Louis.

Pediatrician's Viewpoint, Damon O. Walthall, M.D., Kansas City.

Industrial Medicine:

Hazards in Industry, William L. Macon, M.D., St. Louis.

What Constitutes an Adequate Examination, E. C. Funsch, M.D., St. Louis.

Monday, April 19, 1943—Afternoon Session

Syphilis:

Public Health Aspects, Joseph F. Bredeck, M.D., St. Louis.

Five Day and Other Treatment, Arthur W. Neilson, M.D., St. Louis.

Anesthesia:

Spinal Anesthesia, Joe McNearney, M.D., St. Louis.

Continuous Caudal, Paul H. Lorhan, M.D., Kansas City, Kansas.

Respiratory Disease:

Virus Pneumonia, Robert Moore, M.D., St. Louis.

Pulmonary Lesions of Sulfonamide, Henry Pinkerton, M.D., St. Louis.

Transfusions:

Blood and Blood Substitutes, Paul O. Hageman, M.D., St. Louis, and Raymond Muether, M.D., St. Louis.

COMMITTEE ON MATERNAL WELFARE AND INFANT CARE

Luncheon Meeting

Monday, April 19, 1943—Jefferson Hotel

The Committee on Maternal Welfare and Infant Care held its annual meeting in Dining Room 9, Jefferson Hotel, Monday, April 19, 1943, with Dr. E. Lee Dorsett, St. Louis, Chairman, presiding.

Following luncheon the following program was presented:

Maternal Welfare in Relation to the War, Buford G. Hamilton, M.D., Kansas City. Discussed by W. H. Breuer, M.D., St. James.

The Maternal Welfare Situation in Missouri, M. L. Gentry, M.D., Jefferson City.

Infant Care in Missouri, Chester J. Antos, M.D., Jefferson City.

Various Aspects of Preventive Pediatrics, Park J. White, M.D., St. Louis. Discussed by Drs. Borden S. Veeder, St. Louis; James Stewart, Jefferson City, and L. M. Lyons, Pierce City.

BANQUET IN HONOR OF PAST PRESIDENTS

Sunday, April 18, 1943—Jefferson Hotel

The annual Banquet, tendered to the Past Presidents of the Association, was held in the Gold Room, Jefferson Hotel, at 7:00 p. m., Sunday, April 18, 1943, the President, Dr. H. L. Kerr, Crane, presiding.

Address of Welcome, Robert Mueller, M.D., St. Louis.

Announcements, Neil S. Moore, M.D., St. Louis.

Address of the President-Elect, A. W. McAlester, Jr., M.D., Kansas City.

Address of the President, H. L. Kerr, M.D., Crane.

Introduction of Past Presidents of the Missouri State Medical Association.

Plans for Postwar Medical Service, Morris Fishbein, M.D., Chicago.

MISSOURI STATE MEDICAL ASSOCIATION REGISTRATION AT EIGHTY-SIXTH ANNUAL SESSION

First Councilor District

—12

Barney, Reuben, Chillicothe
Bristow, Arthur S., Princeton

Byland, Benjamin F., Burlington Junction

Byrne, John I., St. Joseph

Crowson, Egbert, Parnell

Dowell, Donald M., Chillicothe

Gray, James A., Watson

Grimes, M. E., St. Joseph

McGlothlan, Arthur B., St. Joseph

Parker, John Z., Pattonsburg

Wallace, Charles H., St. Joseph

Wortley, Cabray, St. Joseph

Second Councilor District

—18

Andrae, Robert L., Louisiana

Barrymore, Eugene, Bowling Green

Birney, William P., Hannibal

Chilton, James C., Hannibal

Cramb, Arthur B., Kirksville

Cunningham, Eric A., Louisiana

Fleming, Thomas S., Moberly

Francka, W. F., Hannibal

Goodrich, Howard B., Hannibal
Hornback, George A., Hannibal
Jennings, Perry W., Canton
Leusley, Marvin E., Moberly
Luman, Frank E., Edina
McCormick, Frank L., Moberly
Murphy, Bernard L., Hannibal
Parker, Roy H., Hunnewell
Sultzman, Francis E., Hannibal
Wood, Adolph M., Shelbina

Third Councilor District —160

Allen, Duff S., St. Louis
Allen, Willard M., St. Louis
Bell, Robert M., St. Louis
Bergman, Hugo F., St. Louis
Black, William D., St. Louis
Bohne, William R., St. Louis
Bowerman, Harold H., St. Louis
Bradley, Frank R., St. Louis
Bredeck, Joseph F., St. Louis
Brockelmann, E., St. Louis
Brown, Arthur C. F., St. Louis
Burford, Cyrus E., St. Louis
Busch, Anthony K., St. Louis
Calkins, Delevan, St. Louis
Campbell, Cecil S., St. Louis
Carroll, Grayson, St. Louis
Claridge, Ralph A., St. Louis
Conrad, Adolph H., St. Louis
Cook, Jerome E., St. Louis
Cook, Ralph L., St. Louis
Cory, Harriet S., St. Louis
Coryell, John E., St. Louis
Davis, Frank L., St. Louis
Devine, John B., St. Louis
Dorsett, E. Lee, St. Louis
Elman, Robert, St. Louis
Emmert, Fred, St. Louis
Engman, Martin F., Jr., St. Louis
Ernst, Edwin C., St. Louis
Falk, O. P. J., St. Louis
Ferris, Joseph L., St. Louis
Fessenden, Ersel M., St. Louis
Forsen, James A., St. Louis
Foster, Howard M., St. Louis
Funsch, C. E., St. Louis
Gafney, George T., St. Louis
Gallagher, John F., St. Louis
Glaze, Kenneth F., St. Louis
Glenn, Joseph E., St. Louis
Gradwohl, R. B. H., St. Louis
Graves, William W., St. Louis
Green, John, St. Louis
Grinden, Joseph, Jr., St. Louis
Hale, Tyre H., St. Louis
Hall, W. Antoine, St. Louis
Hamel, Albert H., St. Louis
Hansel, French K., St. Louis
Hardy, Joseph A., Jr., St. Louis
Hartmann, Jacob A., St. Louis
Heinrichs, J. C., St. Louis
Helbing, Harry H., St. Louis
Henske, Andrew C., St. Louis
Hershey, John H., St. Louis
Hildreth, H. R., St. Louis
Hines, Paul, St. Louis
Hyndman, Charles E., St. Louis
Jones, Otey Sherman, St. Louis
Jorstad, Louis H., St. Louis
Katz, Samuel D., St. Louis
Kelly, Charles A., St. Louis
Key, J. Albert, St. Louis
Keyes, E. Lawrence, St. Louis
Kirchner, Walter C. G., St. Louis
Klenk, Charles L., St. Louis
Kneal, Ellsworth, St. Louis
Koenig, George H., St. Louis
Kohler, Eugene J., St. Louis
Kountz, William B., St. Louis
Kouri, Martin F., St. Louis
Kramolowsky, H. H., St. Louis
Kuhlmann, Frederick C., St. Louis
Lane, Clinton W., St. Louis
Leavy, Charles A., St. Louis
Lee, Cecelia S., St. Louis

Lembeck, Joseph A., St. Louis
Lohr, Curtis H., Clayton
Luedde, William H., St. Louis
Luten, Drew W., St. Louis
McDonald, George H., St. Louis
McLoon, Mary A., St. Louis
McNalley, Frank P., St. Louis
Macko, Joseph R., St. Louis
Macon, William L., St. Louis
Martin, Raymond T., Springfield
Mastin, E. Vernon, St. Louis
Max, Clarence O. C., St. Louis
Merz, Jean J., Fort Riley, Kansas
Millikin, Lester A., St. Louis
Moore, Neil S., St. Louis
Morris, Mary E., St. Louis
Morse, Frank L., St. Louis
Moskop, Peter G., St. Louis
Mountjoy, Grace S., St. Louis
Mudd, James L., St. Louis
Mueller, Robert, St. Louis
Muether, Raymond O., St. Louis
Munsch, Augustine P., St. Louis
Murphy, Paul, Koch
Neilson, Arthur W., St. Louis
Nemours, Paul R., St. Louis
Nicks, Harry G., St. Louis
Norton, William H., St. Louis
O'Brien, Robert M., St. Louis
Payne, Richard J., St. Louis
Peden, Joseph C., St. Louis
Pitzman, Marsh, St. Louis
Ploehn, Emma, St. Louis
Powell, Rudolph V., St. Louis
Probst, Jacob G., St. Louis
Pulliam, Madison J., St. Louis
Quinn, Abram T., St. Louis
Raemond, Alphonse J., St. Louis
Rassieur, Louis, St. Louis
Reller, Helen C., St. Louis
Rendleman, George F., St. Louis
Rice, Earl R., St. Louis
Roblee, Melvin A., St. Louis
Romendick, Samuel S., Koch
Rosenfeld, Herman J., St. Louis
Rotteck, Julius, St. Louis
Ruddell, George W., St. Louis
Sale, Llewellyn, St. Louis
Sauer, William E., St. Louis
Schisler, Edwin J., St. Louis
Schlossstein, Adolph G., St. Louis
Schlueter, Robert E., St. Louis
Scholz, Roy P., St. Louis
Schwartz, Frederick O., St. Louis
Sherwin, Charles F., St. Louis
Signorelli, Andrew J., St. Louis
Sigloff, Emanuel, St. Louis
Smith, Oda O., St. Louis
Soule, Samuel D., St. Louis
Spector, Hymen I., St. Louis
Spivy, Raymond M., St. Louis
Strauss, Arthur E., St. Louis
Stryker, Garold V., St. Louis
Tainter, Frank J., St. Louis
Talbot, Hudson, St. Louis
Thompson, Lawrence D., St. Louis
Thompson, Ralph L., St. Louis
Thym, Henry P., St. Louis
Titterington, Paul F., St. Louis
Trigg, Joseph M., St. Louis
Vaughan, John R., St. Louis
Veeder, Borden S., St. Louis
Vezeau, Stephen, St. Louis
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Vogt, William H., Jr., St. Louis
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Weiss, William, St. Louis
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Zahorsky, John, St. Louis
Zeinert, Oliver B., St. Louis
Zentay, Paul J., St. Louis
Ziegelmeyer, John S., St. Louis

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Brandt, Benj., Foristell
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Dyer, Clyde P., Webster Groves
Dyer, John H., Warrenton
Fallet, Charles E., DeSoto
Finley, Freeman L., St. Louis
Gage, Helen, Webster Groves
Goodman, Nathaniel, St. Charles
Graeser, Richard G., St. Louis
Hageman, Paul O., St. Louis
Irick, Carl C., Webster Groves
Jacobs, Gustave E., St. Louis
Jensen, Julius, St. Louis
Johnson, Grover C., Marthasville
Jones, Garnett, St. Louis
Keeling, Forrest V., Elsberry
Kemp, Thomas J., St. Louis
Kenner, Edwin B., Wentzville
Koch, Otto W., Clayton
Levey, Simon A., St. Louis
McGavran, Edward G., Webster Groves
Mankopf, B. E., Washington
Mays, Frank G., Washington
Neubeiser, Ben L., St. Charles
O'Connell, John, Overland
Pickel, John W., Barnhart
Preston, Richard A., St. Louis
Pritchard, John A., Overland
Rutledge, John F., Crystal City
Schmidt, Herbert H., Marthasville
Schudde, Otto N., St. Louis
Schulz, A. P. Erich, St. Charles
Schwartz, Alfred S., St. Louis
Short, Ulysses S., St. Louis
Spencer, L. D., Richmond Heights
Spitz, Milton A., St. Louis
Stein, Harry J., St. Louis
Steiner, Alexander J., St. Louis
Sterling, John A., Maplewood
Stern, J. Franz, St. Louis
Towers, Orville W., St. Charles
Townsend, James A., St. Louis
Viale, Nicholas S., St. Louis
Walther, Roy A., Overland
Waters, E. B., Kirkwood
Westrup, Arthur W., Webster Groves

Fifth Councilor District —37

Adams, C. Frederick, Jefferson City
Adler, Morton W., Pampa, Texas
Allee, Warren L., Eldon
Andersen, Elmer J. T., Montgomery City
Antos, Chester J., Jefferson City
Barden, Frank W., Centralia
Blankenship, George W., Boonville
Bloom, William A., Fayette
Brashear, Howard C., Mexico
Burke, John P., Jr., California
Conley, Dudley S., Columbia
Crews, Robert N., Fulton
Gillham, Frank W., Jefferson City
Griffin, Fred, Mexico
Gunn, Aubrey J., Versailles

Guyot, J. DeVoine, Jefferson City
Harrison, J. Frank, Mexico
Highsmith, L. S., Columbia
Howard, Stanley P., Jefferson City
Jolley, J. Frank, Mexico
Kelly, Thomas J., Jefferson City
Leech, Maurice P., Fayette
Leslie, Walter L., Russellville
McComas, Arthur R., Sturgeon
Maxey, Hugh W., Jefferson City
Neal, M. Pinson, Columbia
Nifong, Frank G., Columbia
Overholser, Milton D., Columbia
Robnett, Dudley A., Columbia
Shirley, George H., Eugene
Stewart, James, Jefferson City
Summers, Joseph S., Jefferson City
Tincher, Joseph C., Boonville
van Ravenswaay, Arie C. H., Boonville
Washburn, J. Loren, Versailles
Williamson, William H., Mokane
Zeigler, Newell R., Columbia

Sixth Councilor District —23

Adler Benard C., Stockton
Bickford, Wallace M., Marshall
Campbell, A. J., Sedalia
Davis, C. Braxton, Nevada
Garner, Lynn M., Higginsville
Gentry, Merritt L., Jefferson City
Haynes, Robert C., Marshall
Kennedy, Robert W., Marshall
Lawless, Charles L., Marshall
Lawrence, John R., Marshall
Logan, James A., Warsaw
Long, David S., Harrisonville
McBurney, C. A., Slater
Martin, Wilfred E., Odessa
Moore, Ernest M., Sr., Higginsville
Parker, Harry F., Warrensburg
Parkhurst, Charles L., Houghtonia
Powers, John A., Warrensburg
Ryland, C. T., Lexington
Sharp, William L., St. Louis
Smith, J. O., St. Louis
Walker, George S., Clinton
Wallace, Edwin S., Lexington

Seventh Councilor District —30

Asher, A. Graham, Kansas City
Brumm, Lawrence W., Kansas City
Dickson, Frank D., Kansas City
Duncan, Ralph E., Kansas City
Eldridge, Charles J., Kansas City
Elliott, B. Landis, Kansas City
Gilkey, Harry M., Kansas City
Gilliland, Oliver S., Kansas City
Gist, William L., Jefferson City
Grabske, Charles F., Independence
Green, John R., Independence
Hamilton, Buford G., Kansas City
Henderson, James P., Kansas City
Hunt, Claude J., Kansas City
Hunt, Paul F., Kansas City
Jones, Harry L., Kansas City
Knight, John S., Kansas City
Korth, William M., Kansas City

Lapp, Harry C., Kansas City
Leitch, Cecil G., Kansas City
Lockwood, Ira H., Kansas City
McAlester, A. W., Jr., Kansas City
McVay, James R., Kansas City
Mantz, Herbert L., Kansas City
Padgett, Earl C., Kansas City
Robinson, G. Wilse, Kansas City
Simpson, Morris B., Kansas City
Virden, C. Edgar, Kansas City
Walshall, Damon O., Kansas City
White, Edwin C., Kansas City

Eighth Councilor District—32

Amos, James R., Springfield
Beers, Ellsworth G., Seymour
Burney, Wallace S., Miller
Busiek, Urban J., Springfield
Campbell, Donald A., Neosho
Cardwell, Clarence, Stella
Cheek, William C., Springfield
Clark, Samuel M., Halltown
Clinton, Lloyd B., Carthage
Cole, Paul F., Springfield
Cowan, R. D., Aurora
DeTar, Burleigh E., Joplin
Glasco, Loren A., Urbana
Glenn, Elmer E., Springfield
Glover, Kenneth, Mt. Vernon
H'Doubler, Francis T., Springfield
Horton, James D., Springfield
James, Robert M., Joplin
Kerr, Homer L., Crane
Lowe, Horace A., Springfield
Lyons, L. Mason, Pierce City
McCraw, Doyle C., Bolivar
Macdonnell, Carey R., Marshfield
Poor, Carl W., Joplin
Sewell, W. S., Springfield
Simpson, Emerson L., Springfield
Smith, C. Souter, Springfield
Smith, Wallis, Springfield
Stocker, Jesse A., Mt. Vernon
Webb, Leslie R., Springfield
West, William M., Monett
Williams, John W., Springfield

Ninth Councilor District—16

Bohrer, E. Claude, West Plains
Breuer, Robert E., Newburg
Breuer, William H., St. James
Butler, Fred E., Salem
Callihan, C. F., Willow Springs
Cotton, Tolman W., Van Buren
Crider, Adolphus J., Dixon
Drake, Avery A., Rolla
Gentry, Marvin C., Ava
Harrell, Roosevelt E., Lebanon
Henson, Lafayette L., Bunker
Hope, James L., Lebanon
Horne, Albert H., Steelville
Malette, Cyrus, Crocker
Oliver, Everett A., Richland
Randall, Leslie, Licking

Tenth Councilor District—25

Barron, W. Harry, Fredericktown
Bugg, Andrew F., Ellington
Bull, Ben M., Ironton
Cochran, J. Howard, Cape Girardeau
Estes, Albert M., Jackson
Ferguson, Arthur D., Benton
Harland, R. E., Ironton
Hawkins, N. William, Farmington
Higdon, Edward E., Fredericktown
Hoctor, Emmett F., Farmington

Lanning, Robert W., Ste. Genevieve
Luten, Joseph B., Caruthersville
Miller, Herbert S., Sikeston
Nienstedt, Elam J., Sikeston
Oehler, William F., Cape Girardeau
Ritter, Raymond A., Cape Girardeau
Rolwing, E. Charles, Charleston
Sample, George A., Chaffee
Sparhawk, William J., Cape Girardeau
Spence, Elbert L., Kennett
Taylor, Van W., Bonne Terre
Thurman, Joseph L., Potosi
Tygett, Glenn J., Cape Girardeau
Wilkins, John A., St. Marys
Zimmermann, Carl A. W., Cape Girardeau

Guest Speaker—1

Fishbein, Morris, Chicago

Visiting Doctors of Medicine, Interns and Students—41

Alex, Morris, St. Louis
Barnett, Henry L., St. Louis
Bona, George S., St. Louis
Budge, O. S., St. Louis
Combs, J. D., Lockwood
Donley, Leo, Jr., St. Louis
Elliott, H. B., Springfield, Ohio
Ernst, E. C., Jr., Kirkwood
Fent, Lee S., St. Louis
Ferguson, John, St. Louis
Flannery, Marvin G., Jefferson Barracks
Gessler, C. N., St. Louis
Goodof, Irving I., St. Louis
Greenhouse, J. M., Longview, Texas
Groshart, O. D., New Orleans, Louisiana
Gulick, Charles R., St. Louis
Holcombe, R. L., Marine, Ill.
Howell, Hickman, St. Louis
Kempff, J. W., Highland, Ill.
Kurz, R. F., Alton, Ill.
Lorhan, P. H., Kansas City, Kansas
McCarthy, Harry H., St. Louis
McNearney, Joseph, St. Louis
Mattingly, Louis, St. Louis
Moore, Robert A., St. Louis
Pinkerton, Henry, St. Louis
Potter, Andrew D., Detroit, Mich.
Powell, E. A., St. Louis
Saxton, John A., St. Louis
Schiortino, J. S., St. Louis
Schur, H., St. Louis
Schwartz, E. C., St. Louis
Seifert, O. J., Rochester, Minn.
Shinall, Harold L., Springfield
Spitzer, Ernest, St. Louis
Stonocypher, David D., Nebraska City, Nebr.
Stromgren, Delph T., Jefferson Barracks
Wiedemann, Frank E., Terre Haute, Ind.
Wolanczyk, H. S., Lebanon
Wolcott, R. R., St. Louis
Zarlengo, Frank N., Springfield

Visitors—14

Bartleson, W. H., Kansas City
Fry, Gerald, St. Louis
Gale, Linda Barron, Fredericktown
Gunn, Mrs. Aubrey J., Versailles
Handley, Elsie, Clayton
Hofstetter, L., St. Louis
Jones, Lloyd R., St. Louis
McCarthy, Ray F., St. Louis
Mothershead, Edgar J., Clayton
O'Brien, T. R., St. Louis
Pratt, Donald E., St. Louis
Smith, A. P., St. Louis
Sultzman, Mrs. Francis E., Hannibal

Wiedemann, Mrs. Frank E., Terre Haute, Ind.

Exhibitors—95

Abbott, C. R., St. Louis
Atwater, R. C., St. Louis
Aubuchon, H. F., Chicago
Baker, H. H., Chicago
Barbery, Miss L., Minneapolis
Beyreuther, P. F., St. Louis
Biesterfeldt, Jane, St. Louis
Blankenbaker, H. L., Indianapolis
Breckenkamp, A. W., St. Louis
Bresnan, J. J., Detroit
Brown, A. E., St. Louis
Buescher, Fred M., St. Louis
Cameron, Alex. S., Chicago
Clearwater, Charles L., St. Louis
Danforth, F. A., Indianapolis
Davis, J. S., Austin, Texas
Davis, William H., New York
DeGroff, Mark, Park Ridge, Illinois
Dick, C. F., St. Louis
Dillon, C. A., Cincinnati
Dodge, J. A., St. Louis
DuGay, Mrs. M. L., Los Angeles
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Fox, Byron, Kansas City
Gaffney, N. M., Upper Darby, Pennsylvania
Gaffney, S. A., Rahway, N. J.
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Gieseking, Wm. H., St. Louis
Gilbert, W. R., St. Louis
Gilcrest, Edna, St. Louis
Gilliland, D. G., St. Louis
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Hamilton, M. C. S., St. Louis
Hart, L. W., Kansas City
Heggemeier, V. W., St. Louis
Helfritz, W. H., New York
Ilg, Charles J., St. Louis
Junglerich, Frank L., St. Louis
Johnson, Charles F., St. Louis
Kastrup, E. K., St. Louis
Krauss, Fred E., St. Louis
Lansberg, F. B., St. Louis
Lieder, A. C., St. Louis
Lindh, Wm. C., St. Louis
Long, Kenneth V., St. Louis

McBride, H., Ferguson
McKnight, Ruth, University City
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Martz, Del, St. Louis
Meier, Harold F., St. Louis
Meyer, George P., St. Louis
Moss, R. F., Kansas City
Nooner, T. A., Orange, N. J.
Nooner, T. A., Jr., Orange, New Jersey
Norman, William R., St. Louis
Nowak, A. E., St. Louis
Oberst, George P., St. Louis
Olsen, F. C., Minneapolis
Pfau, Robert P., New York
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Phillips, T. A., Philadelphia
Plourde, George, St. Louis
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Ritzen, Frank, Springfield
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Schroers, J. B., St. Louis
Schultes, A. A., St. Louis
Schwab, E. F., St. Louis
Sherbyrne, A. H., Kansas City
Sherman, Harold, St. Louis
Siebrandt, J. R., Kansas City
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Stauder, I. L., St. Louis
Steinmann, Herbert R., New York
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Sullens, R. A., St. Louis
Tilford, E. L., Indianapolis
Timmons, W. H., Kansas City
Tschudy, Ralph F., University City
Wagner, R. A., Philadelphia
Wasem, O. A., St. Louis
Watson, Fred S., St. Louis
Waye, R. D., St. Louis
White, E. W., St. Louis
Winkelmann, H., St. Louis
Wulfmeyer, D. H., St. Louis
Wyly, William J., Kansas City

TOTAL—559

BOOK REVIEW

CHEMOTHERAPY OF GONOCOCCIC INFECTIONS. By Russell D. Herrold, B.S., M.D., Associate Professor of Surgery (Urology) College of Medicine, University of Illinois, Chicago, Illinois. St. Louis: The C. V. Mosby Company. 1943. Price \$3.00.

This is a new treatise on the treatment of gonococcal infections with special emphasis on the use of the sulfanamide drugs. In the first portion of the book considerable amount of space is devoted to the evolution of the various sulfanamide drugs beginning with sulfanilamide, sulfapyridine, sulfathiazole and sulfadiazine. There is a comparison made between the various drugs and their value in the treatment of various gonococcal infections in both male and female. In addition to a complete history in regards to evolution of the drugs there is also detailed information as to the exact dosage, indications and contraindications with specific information in regards to local therapy.

The last portion of the book is devoted to a review of illustrated case histories pointing out various types and complications of therapy. There is also detailed information in regards to type of treatment that one should follow.

The book is clearly and concisely written, it is easy to understand and is an extremely practical book for the general practitioner.

A. E. U.

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A MORE EXTENSIVE OPERATION FOR HYPERTENSION

REPORT OF CASES

ROLAND M. KLEMME, M.D.

AND

CAPT. R. DEAN WOOLSEY, M.C., A.U.S.

ST. LOUIS

Hypertension is still "essential" in most instances. A great deal of work has been done during the last dozen years in an effort to change this status but the name continues to be used. The work of Goldblatt suggests potentialities relative to the etiology of this condition. Much work also has been done along this line by Page and his co-workers in Indianapolis. Nevertheless, the treatment is still nonspecific. At present, treatment for this condition is divided into two types; i.e., medical and surgical. Medical therapy of essential hypertension stresses the psychic factors. An attempt is made to retard the activities of these people by use of either bromides or phenobarbital. Phenobarbital is still probably the most useful drug. Potassium sulfocyanate has been used widely; in some cases in conjunction with surgery. This latter drug will lower blood pressure definitely in many instances. It is necessary to follow the blood level of the drug very closely and it is also necessary to check the various formed elements of the blood frequently. In certain females, during the menopause a rather alarming elevation in blood pressure quite frequently develops. A combination of stilbestrol and either phenobarbital or potassium sulfocyanate is often efficacious in the menopausal type of patient. When these various drugs have been tried and found wanting, surgery usually is contemplated.

The results of sympathectomy have varied greatly both in the individual patient and in the collected reports. Peet, of Ann Arbor, has the most completely studied series of surgically treated cases in this country. His results with his operation

are excellent. If they are to some extent better than those of others using the same operative procedure, in all probability the procedure is not at fault.

CLINICAL PICTURE

The clinical picture of hypertension is almost as varied as that of the other mimics in medicine, syphilis and tuberculosis. Headaches, dizziness or scotomata may be initial symptoms. Conclusive seizures may be the first manifestation. Nocturia and polyuria are frequent complaints. A history of frequent "nervous breakdowns" is not uncommon. Apoplexy may be the first evidence of a disturbed vascular system. These manifestations usually can be classified as those issuing from damage to the brain, heart and kidneys, these three organs being affected to a greater or a lesser degree.

Physical examination may reveal much or little more than the elevated blood pressure. Moderate cardiac enlargement is common. We have come to classify these patients on the basis of physical and laboratory findings as follow:

Group 1. Labile blood pressure 150 to 200 systolic over 100 to 130 diastolic. No renal damage. Usually younger age groups. Eyegrounds normal. Pathologic condition, arteriolar spasm.

Group 2. Blood pressure high without variation usually nonlabile. Moderate renal damage. Usually slightly older patient. Eyegrounds may have hemorrhages without papilledema.

Group 3. Contracted kidney with attendant symptoms.

Group 4. Younger individuals with papilledema. Malignant hypertension. Far advanced kidney damage. Rapid progression to death.

Kidney function is judged entirely on the basis of laboratory work. Specific gravity of the urine is a more reliable guide than any single laboratory figure and it is the simplest to obtain. A specific gravity fixed at 1010 means advanced renal damage. The nonprotein nitrogen gives pertinent information as to kidney status. Electrocardiogram determination often will demonstrate various degrees of heart block. If the patient has had

From the Neurosurgical Service of Roland M. Klemme, M.D., Professor and Chairman, Section of Neurosurgery, St. Louis University School of Medicine.

one or more episodes of apoplexy, ventriculography will give valuable information as to the localization of surgically removable subcortical hemorrhages.

DIFFERENTIAL DIAGNOSIS

Hypertension is dubbed "essential" when a careful search has revealed no other possible etiology. Lead poisoning should be ruled out as well as intracranial tumors. Unilateral infectious lesions of either kidney may be revealed by use of an intravenous pyelogram. A chronic nephritis quite often is accompanied by red cells in the urine. In many cases it is difficult to tell which came first, hematuria or hypertension. It is, however, doubtful whether any patient suffering from essential hypertension ever runs the full course of the disease without having red blood cells in the urine. Rarely will a patient with a well established hypertension fail to have at least a trace of albumin in the urine.

INDICATIONS FOR SYMPATHECTOMY

A labile blood pressure indicates an ideal patient for operation. If after a short period of from one to two weeks bed rest, the blood pressure falls markedly, then that patient is a good candidate for surgery. A patient under the age of 45 is preferable. But who is to say that the older patients should not be given the benefit of the doubt? Peet reports one patient 65 years of age with a good result. The oldest in our series is 69 years of age. If we can give these older patients relief from headaches, nervousness and dizziness for a year or two, we believe it to be worth-while.

Kidney function tests are of some value. There are many of them but few are helpful. The non-protein nitrogen determination is of definite value; and, if it is more than 45 milligrams per one hundred cc. of blood, we do not advise sympathectomy. The best guide to renal function is undoubtedly the specific gravity of the urine. If a patient can concentrate to 1010 or better, his kidneys will tolerate a sympathectomy. The more advanced the renal damage, however, the less likely the operation is to succeed in its primary purpose of lowering the blood pressure. All have known instances, however, of patients with advanced renal damage who have survived usefully for from two to three years following operation. We have also seen several instances of transient oliguria following sympathectomy but we have had no fatalities.

Little information is derived from other renal function tests. Examination of the patient, the nonprotein nitrogen and specific gravity of the urine are the best guides to ability of the patient to survive operation. Naturally, the younger the patient, the better the renal function, the better the chance of a successful outcome.

RESULTS OF SYMPATHECTOMY

About 50 per cent of patients are relieved, i.e., blood pressure is lowered and symptoms are al-

leviated. About 25 per cent have only a transient fall in blood pressure, but symptoms are very much improved. Another 25 per cent are helped little, if at all.

OPERATION

There is, we believe, a reason why the results of sympathectomy for hypertension have been variable and confusing. Smithwick has shown that the type of sympathectomy done heretofore has not been sufficiently extensive. He presented a new type of operation combining the supradiaphragmatic approach of Peet and the commonly performed subdiaphragmatic type. He was undecided as to whether it was necessary to remove both first and second lumbar ganglia. In order to expose these ganglia, Smithwick makes a hockey stick incision, removes the twelfth rib and severs the attachment of the diaphragm to the twelfth dorsal vertebra. By this, the kidney and adrenals are exposed and the diaphragm is resutured at the end of the operation. We have modified this somewhat. In working on cadavers, we have found that the diaphragm will strip from the twelfth dorsal and first two lumbar vertebrae, it being necessary only to sever the attachment to the body of the first lumbar. We also have found that by removing the inner one and one half inches of the eleventh rib (Peet's procedure) and the twelfth rib, the pleura is exposed easily and stripped from the vertebrae and, at the same time, the diaphragm is dissected bluntly from the bodies of the twelfth dorsal and first two lumbar vertebrae. When this is done, with the patient in the kidney position, the lung and diaphragm fall away easily from the vertebrae and a beautiful exposure of all three splanchnics and the sympathetic chain is obtained. The chain is freed from the vertebrae by blunt dissection and this is carried as far cephalad as possible. The long splanchnic likewise is freed as far as possible. Both the chain and the long splanchnic are severed as far cephalad as possible. Traction is then put on these two structures and they both are found to run beneath a small slip of the diaphragm which must be severed. When this is done the long splanchnic is dissected free easily to its attachment to the celiac ganglion. This structure is coagulated and one fourth of it removed. The sympathetic chain now is found to course anteriorly on the body of the first lumbar vertebra. This is dissected free as far as possible with the index finger and the entire chain then is avulsed. From 15 to 18 centimeters of each structure is removed thus. From specimens obtained thus far, it is difficult to tell whether the first or the first and the second ganglia have been removed. It has been our experience that sympathetic ganglia are often quite difficult to identify. Suffice it to say that the lower extremities of all our patients have been warmed up from two to four degrees following the procedure. The muscle and skin are closed in layers. The

diaphragm is anchored to the twelfth intercostal group of muscles. One difficulty that may be encountered is entering the pleural cavity. This usually can be avoided if the diaphragm is stripped off the vertebrae before the pleura is dissected free. It is necessary to cut the twelfth intercostal nerve artery and vein, and the patient is likely therefore to have considerable abdominal pain postoperatively. Thus far, this procedure has been used in the following cases.

REPORT OF CASE

Case 1. I. R., a 24 year old white male, referred by Dr. A. Estes, Cape Girardeau, was admitted to St. Luke's Hospital on October 5, 1942, with a chief complaint of headaches and pain in the back of the neck. About three weeks before admission he had complained of severe headache while working, and about ten minutes later became nauseated and vomited several times. During the following week, he had constant severe headaches and vomited frequently. He was admitted to the hospital at Cape Girardeau and given intravenous fluids. Lumbar puncture done at that time revealed bloody spinal fluid. After five days in the hospital, he returned to his home and seemed all right for two days, when he suddenly lost consciousness for about forty-five minutes. Upon regaining consciousness his speech was thick, he again complained of severe headache, neck pain and pains in his eyes. He was readmitted to the hospital and daily lumbar punctures were done. The spinal fluid cleared gradually. The patient continued to complain of headaches and was almost unmanageable on admission to the hospital. During the last five years it was known that this boy was suffering from hypertension. The urine had shown a trace of albumin at each examination during that time. His father had died of a stroke at the age of 51.

Physical examination showed a well developed and well nourished white male whose pupils were widely dilated but did react to light. Ophthalmoscopic examination showed diffuse retinal hemorrhage completely obscuring all landmarks in the posterior aspect of the eyeball. Vision was restricted to counting of fingers only. The heart showed reduplication of the first sound at the apex, gallop rhythm, no murmurs. The blood pressure was 160/110. Neurologic examination revealed a stiff neck with bilateral Kernig signs. There was some hyperactivity of the reflexes and bilateral Babinski.

On the date of admission, a ventriculogram was done and the ventricular system was found to be somewhat dilated. The patient therefore was returned to the operating room and a ventricular drainage was done with a number 22 soft rubber catheter. The catheter was allowed to remain in place for seventy-two hours.

Laboratory Findings.—Urine was concentrated to 1017 on one occasion with a trace of albumin and an occasional red blood cell. Nonprotein nitrogen of the blood was 24. The red blood count was 4.03 million. The white blood count was 14,600.

On October 21, 1942, a sympathectomy was done on the left side after the manner described in the text. The patient convalesced nicely from this procedure and, on November 5, 1942, the right side was done. Following these procedures, the patient improved markedly; he was discharged from the hospital on November 28, 1942. Blood pressure on discharge was 130/100, in the erect position. The eyegrounds were clearing markedly and his vision had improved considerably. When last seen, on January 8, 1943, his blood pressure was 140/90, his vision was fairly good and his eyegrounds were practically clear.

COMMENT

This patient is extremely interesting from several points of view. First of all, he was entirely blind except for light perception on admission. His pupils were widely dilated. He was extremely restless, complained bitterly of headache and was almost unmanageable. It was obvious that no surgery could be done on a man in such a condition. Because we have noticed that ventricular puncture is sometimes of value in reducing the intracranial pressure in these cases, a ventriculogram was done, and this showed the ventricular system to be somewhat dilated but undistorted. Accordingly, a soft rubber catheter was introduced into the posterior horn of the right ventricle and the ventricular system drained for seventy-two hours before the catheter was removed. On the following day his blood pressure had fallen to 150 and he looked better. He continued to improve and kidney function tests, as noted, showed some kidney reserve.

Following sympathectomy on the one side, the eyes improved markedly and he was much better. The mistake was made of telling the patient when his second operation was to take place and he again began to have severe headache, blood pressure became elevated and a ventricular tap was again done through the old opening. Following the second operation, we found that in the reclining position his blood pressure was 170/105, and sitting in a chair it was 130/60. This substantiates Smithwick's claim that if a sympathectomy is sufficient in scope, the blood pressure will be altered with change in position. His eyegrounds on discharge were clearing rapidly; both disks could be seen; the retinal hemorrhage was clearing rapidly.

This patient exhibits the life-saving value of ventricular tap which should be done, we believe, in place of lumbar puncture in these cases as was suggested by Blackfan in 1926, when he warned of the danger of herniation with pressure cone formation of the medulla and the cerebellar tonsils. In at least two cases we have been able to reduce the systolic blood pressure 100 millimeters of mercury by ventricular decompression and, in the instance quoted, we have been able to use the procedure of ventricular tap to render the patient suitable for sympathectomy. This is suggested again by the finding of a dilated ventricular system in a majority of hypertensive patients. This also would support Blackfan's old hypothesis that the cerebral manifestations of hypertension tend to run in a vicious cycle; the foramina of Luschka and Magendie being closed off by the early increase in pressure and the fourth ventricle block thus produced, tending to increase the interventricular pressure and therefore the intracranial pressure. This is disputed by others but it is, we believe, still the best explanation for all the phenomena that we have observed in doing air in-

jections on some twenty-five to thirty hypertensive patients.

REPORT OF CASE

Case 2. A.S., a 50 year old white female, was admitted to St. Louis City Hospital on September 3, 1942. Informant was patient's son.

Three days before admission the patient had complained of pain in her eyes, had vomited several times and became comatose. She had been at Jewish Hospital two years previously with a diagnosis of hypertension. Other history was rather difficult to elicit. Physical examination showed a 50 year old white female, irrational, stuporous and lethargic. She did not know where she was and could not recognize anyone. Examination of the fundi showed bilateral papilledema with hemorrhages. The blood pressure was 265/145; heart was enlarged to the left. The rate and rhythm were regular. Neurologic examination showed a flaccid paralysis of the right arm and leg with Babinski and hyperactive knee jerks. A lumbar puncture was done. Spinal fluid pressure was 265. The fluid was xanthochromic. A ventriculogram was done on September 25, 1942. This revealed a filling defect in the left occipital lobe and, on October 1, 1942, a subcortical clot was removed from that location.

Operative Note.—Under avertin and local novocain and pentothal anesthesia, an occipital flap was turned down in the usual manner over the left occipital lobe. The dura was opened with the base toward the longitudinal sinus, exposing a softened area in the occipital lobe close to the midline. This was incised with the cautery knife and a large clot about the size of a handball was removed. All bleeding was controlled with the electrosurgical knife. The dura was replaced and sutured with interrupted black silk sutures. One stab drain was placed beneath the flap. Galea and skin were sutured with interrupted black silk sutures. Silver foil and gauze dressing were used.

Following the operation, the patient did very well and was up and walking around in about two weeks. Laboratory work at this time showed urine concentration to 1018 specific gravity, four plus albumin, non-protein nitrogen 31 milligrams per 100 cc. of blood. The urea clearance was 73 per cent. The serologic examination was normal.

On October 19, 1942, a sympathectomy was done on the left side after the manner described before and, on November 2, 1942, the right side was done. The patient did nicely following these procedures. Her blood pressure on discharge was 150/105, when she was erect. In the reclining position it was usually 170/120. She was discharged on November 18, 1942. When last seen, February 1, 1943, her blood pressure was 180/100.

COMMENT

This patient again serves to emphasize the importance of ventriculography when dealing with "stroke." This patient exhibited papilledema and hypertension. A ventriculogram was done because of this and a large subcortical clot was found and extricated. Following this, extensive bilateral sympathectomies were done. This patient likewise exhibited considerable variation in her reclining and erect blood pressure readings.

REPORT OF CASES

Case 3. E. W., a 32 year old white male, was first admitted to Firmin Desloge Hospital on July 25, 1942. At that time a diagnosis of chronic glomerular nephritis with hypertensive vascular disease was made. He was admitted for the second time on the Surgical Service on October 23, 1942, with a chief complaint of head-

aches, dizziness, nocturia and frequency, nervousness and restlessness of two years duration. He had been told that he had hypertension when examined for life insurance one year previous. The Army rejected him for the same reason. Since that time, he had not been able to find work. He stated that he had had "trouble with his kidneys" for many years. During that time, there had been frequent nocturias which had become much worse during the last six months. There was no history of pyuria or hematuria. Physical examination was largely normal except for the blood pressure. It ranged from 166/132 to 250/140.

Laboratory Findings.—The cold pressor test showed a sudden rise and fall in the blood pressure two and one half minutes after emersion of the hands in cold water. With the concentration and dilution tests he was able to concentrate to 1029 and dilute to 1002. The nonprotein nitrogen was 32. There was no albumin in the urine. White blood count was 10,450; red blood count 5.17 million, hemoglobin 100 per cent.

On November 10, 1942, a sympathectomy was done on the right side and, on December 2, 1942, the left side was done, both after the method described. Postoperative course was uneventful except for a slight wound infection after the second operation.

Case 4. R. H., a 44 year old white male, referred by Dr. F. G. Mays, Washington, Missouri, was admitted to St. Luke's Hospital on November 21, 1942. This man complained of dizziness, shortness of breath, nervousness and epistaxis of three years' duration. During this time, there also had been some shortness of breath, dizziness, tinnitus and swelling of the ankles. A few months previously the patient had had a slight cough with some blood-tinged sputum. Past history was irrelevant.

Family History.—The patient's father died of a stroke at the age of 65. He had been known to have had high blood pressure.

Physical Examination.—Eyes showed fundi normal with marked tortuosity of the vessels. Heart was slightly enlarged; pulse 88; blood pressure 300/160. The lungs were clear.

Laboratory Findings.—There were occasional red blood cells in the urine with a large trace of albumin. The nonprotein nitrogen was 26. The red blood count was 4.38 million; hemoglobin 63 per cent; white blood count 8,200.

Two operations were performed on this man; the first on November 24, 1942, the second on December 9, 1942, after the manner described. His postoperative course was uneventful. Blood pressure on discharge was 160/110.

COMMENT

These two patients exhibited no papilledema. In one instance the blood pressure was well over three hundred systolic.

SUMMARY AND CONCLUSIONS

1. A modification of Smithwick's procedure with details of operation is presented.

2. All of our patients thus far operated upon in this fashion have shown an increase in skin temperature of the lower extremities, thus demonstrating the extent of the lumbar portion of the sympathectomy.

3. Ventriculography should be considered in any hypertensive patient with a so-called "stroke," especially when papilledema is present.

4. Ventricular tap is a valuable aid in lowering some patients' blood pressure, particularly when there is evidence of extreme intracranial pressure as evidenced by marked papilledema.

5. We believe that Smithwick is correct in his surmise that previous sympathectomies have not been sufficiently extensive.

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THE USES AND ABUSES OF THE SULFA DRUGS

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Blessings are seldom unmixed and the sulfa drugs are no exception to this well known rule. That these drugs have aided materially in the treatment of disease is, of course, too well known to need discussion. That each drug has its indications and that all of the compounds can at times be dangerous is apparently less well known or, if known, too frequently ignored.

Contrary to common belief, the sulfonamides are not extremely new. They were being used experimentally before the first World War; indeed, strange as it seems, it was that war which delayed study and the present war which accelerated study of the sulfa drugs.

At first the drug, sulfanilamide, was used in conjunction with a dye, but it was soon shown that the dye was not essential and when this became known and accepted, the chemists became interested in trying to synthesize more potent or more specific drugs of similar chemical formula using the basic sulfanilamide configuration as a keystone. Sulfanilamide lends itself particularly well to this sort of thing and hundreds of sulfanilamide compounds have been synthesized. Only a few, however, have proven of value in clinical work and the present discussion will be limited to these. The rest either have been found to be without effect on bacterial disease or have been shown to be too toxic for clinical use.

The sulfa drugs now most commonly used are sulfanilamide, sulfapyridine, sulfathiazole, sulfadiazine, sulfaguanidine and sulfasuxidine; they have been introduced in approximately the order given and they will be discussed in the same order. For the sake of clarity, the indications, dosage and degree of toxicity of each drug will be given in table form and this outline will be filled in briefly in the body of the paper. A discussion of the toxicity will be given as a separate part since all sulfa drugs tend to produce toxic reactions under certain circumstances, the chief differences being the degree and frequency. It would be repetition therefore to discuss all the toxic reactions under each of the various compounds.

Sulfanilamide.—Sulfanilamide (table 1) is the parent drug and perhaps the best known of the various compounds. It was found to be extremely useful in the treatment of hemolytic streptococcal infections and is still the most potent for that pur-

pose. It is also useful in the treatment of gonorrhea, pneumonia, meningococcus meningitis and perhaps in brucellosis. It is said to be of value in the treatment of actinomycosis, venereal lympho-

Table 1. *Sulfanilamide (p-aminobenzene sulfonamide)*

Clinical Indications:

Diseases: Streptococcal septicemia and related diseases, brucellosis, meningococcal meningitis, gonorrhea, gas gangrene, Actinomycosis, venereal lymphogranulomata.

Possible Prophylaxis: Burns, wounds, compound fractures, otitis media.

Peritonitis.

Adults:

Initial Dose: 0.10 Gm. per kilogram body weight.

Maintenance Dose: 0.10 Gm. per kilogram body weight divided into six doses and given day and night for seven days or more after the temperature has returned to normal.

Children:

Same as for adults.

Absorption from gastrointestinal tract is excellent.

Diffusion into body fluids is very good.

Excreted rapidly in the urine.

Toxicity:

Rather high percentage of toxic and side reactions.

granulomata, gas gangrene and in one or two virus diseases such as trachoma. Prophylactically it has been recommended in the treatment of burns, flesh wounds due to gun shots and similar war injuries, compound fractures, otitis media and peritonitis. The drug can be used locally as a powder.

The dose of the drug varies for adults and children. It is extremely important that satisfactory dosage be used in this as in all the other sulfa compounds since too little fails to give optimal and useful concentrations of the drug in the blood stream while too much gives concentrations which are too high and lead to increased toxicity. The dosage discussed throughout this paper should be taken as average and should be controlled and guided by blood concentration studies. It can not, in my opinion, be emphasized too strongly that satisfactory results with the sulfa drugs depend on the securing and maintaining of optimal concentrations of the drug in the blood stream. The exception to this, as shall be pointed out later, lies with the less readily absorbed sulfa drugs which are being used for their effect on the gastrointestinal tract, e.g., sulfaguanidine, sulfasuxidine. Sulfanilamide should be given to adults on the basis of 0.10 Gm. per kilogram of body weight in the initial dose; the maintenance dose is calculated in the same manner but is divided into six doses and is given every four hours day and night. Such a schedule assures a uniform concentration in the blood at all times.

In children the dose is essentially the same as for adults but it may be found necessary to increase the dose per kilogram of body weight in order to develop a satisfactory concentration. Children, as a rule, tolerate the drug better than adults. As noted in table 1, sulfanilamide is well absorbed from the gastrointestinal tract and diffuses readily into the body fluids. It is excreted rapidly and readily by the kidneys. Complications in the kidneys are rather unusual when sulfanilamide is used, but they can occur.

Toxicity due to sulfanilamide is common and it is this factor which has led to the introduction of other compounds and their ready acceptance by the profession.

Table 2. *Sulfapyridine* (2 (para-aminobenzene sulfonamide) pyridine)

Clinical Indications:

Diseases: Anthrax, strep. viridans meningitis, pneumonia, meningitis, gonorrhea, brucellosis, trachoma, venereal lymphogranulomata.

Prophylaxis: Otitis media.

Dosage:

Adults:

Initial Dose: 4 gms.

Maintenance Dose: 1 gm. every four hours day and night.

Blood level desired six to eight milligrams per 100 cc. Continue until temperature has been normal for three days.

Children:

Initial Dose: 0.15 gms. per kilogram to 25 kilogram.

Maintenance Dose: 0.15 gms. per kilogram divided into four doses and given at six hour intervals.

Absorption from the gastrointestinal tract is good but erratic.

Diffusion into the body fluids is good. May reach 65 per cent of the blood concentration in the spinal fluid.

Excretion in urine is somewhat slower than with sulfanilamide, concentrations are likely to occur, particularly in acid urine.

Toxicity:

Considerably greater than with sulfanilamide.

Sulfapyridine.—This drug (table 2), originally introduced because it was thought to have a rather selective action for the pneumococcus, has since been found to be useful in the treatment of gonorrhea, meningococcic meningitis, streptococcus viridans meningitis, endocarditis and brucellosis. It is said by some to be useful in the treatment of trachoma, anthrax and venereal lymphogranulomata. It has some action against hemolytic streptococcus and staphylococcus although this action is not as marked as it is with some of the other sulfa drugs.

The initial dose in adults is about 4 Gm. to 6 Gm. or 0.1 Gm. per kilogram of body weight, while in children it is about 0.15 Gm. per kilogram of body weight, and probably should not exceed 4 Gm. The maintenance dose is about 1 Gm. every four hours. In children the dose given for the initial dose on the basis of body weight can be divided into six doses and given every four hours as a maintenance dose.

A blood concentration of from 4.5 mg. to 6 mg. should be secured. This is in contrast to the concentration sought when sulfanilamide is used, for with that drug a blood concentration of from 15 to 20 mg. may not be considered excessive.

Absorption from the gastrointestinal tract of sulfapyridine is good but erratic. Diffusion into the body fluids is adequate and may reach 65 per cent of the blood concentration in the spinal fluid.

Excretion in the urine is somewhat slower than with sulfanilamide and kidney complications, particularly renal concretions, are more likely to occur. This is particularly true if the urinary output is reduced and the urine becomes acid in action.

Toxicity with the drug is on the whole considerably greater than with sulfanilamide, particularly

in relationship to the kidneys and the gastrointestinal tract. Other toxic symptoms also occur frequently.

Sulfathiazole.—Original work with this drug in lower animals showed it to be superior to the other sulfa drugs then available in the management of staphylococcal infections. This laboratory promise has been fulfilled clinically and the drug is useful both locally and systemically in the treatment of all types of staphylococcal infections. It also has been found helpful in the treatment of pneumococ-

Table 3. *Sulfathiazole* (2 (para-aminobenzene sulfonamide) thiazole)

Clinical Indications:

Diseases: Pneumococcal infections in all forms, gonorrhea including gonococcal arthritis, staphylococcal infections of all types, colon bacillus infection of the urinary tract as well as the tissues.

Prophylaxis: Burns, genito-urinary tract infections, peritonitis and otitis media.

Adults:

Initial Dose: 4 Gms.

Maintenance Dose: 1 to 1.5 Gms. every four hours day and night. Should be continued for long periods, and particularly in staphylococcal infections.

Children:

Initial Dose: 0.15 Gms. per kilogram body weight.

Maintenance Dose: 0.15 Gms. per kilogram divided into six daily doses.

Absorption from the gastrointestinal tract is good.

Diffusion into the body fluids is good except for the spinal fluid in which concentration is fairly low.

Urinary excretion is rapid, concretions may form if urine output falls below 1,000 cc. per twenty-four hours.

Toxicity:

Less than sulfanilamide; tends to cause fever and skin rashes.

cal infections, gonorrhea including gonococcal arthritis and colon bacillus infections of the genito-urinary tract as well as the tissues. Prophylactically it is used in burns, peritonitis, otitis media and in genito-urinary tract infections. Recently the microcrystal and the sodium salt have been used in nose and throat work.

The dose is essentially the same as that employed with sulfapyridine. It is difficult to obtain high concentrations and larger doses may have to be employed. A concentration of between 3.5 and 5 mg. per 100 cc. has proven satisfactory in my experience. When the drug is used in staphylococcal infections it should be continued for a long time. This is especially true when the patient has osteomyelitis. The dose may be reduced gradually until during the convalescence the blood concentration may be kept at only 1 mg. per 100 cc. I have maintained several patients on this drug for from six to eight months without ill effects although blood counts and urine studies were done at frequent intervals.

Sulfathiazole is absorbed readily from the intestines and it diffuses into the body fluids with ease although it is difficult to obtain a high concentration in the spinal fluid. Sulfathiazole is excreted readily by the kidneys but renal concretions form readily if urinary output falls or if the urine becomes excessively acid. It is best when administering any of the sulfa drugs to maintain an alkaline reaction in the urine and to maintain urinary output at 2,000 cc. per day.

Toxicity on the whole is less than with the drugs already discussed. Sulfathiazole may cause bizarre skin eruptions and high fever. Hematuria may develop.

Sulfadiazine.—This drug, introduced because of its low toxicity, has proved superior in my hands to all the other drugs previously mentioned. It is far less toxic than the others and has been effective therapeutically. It is useful in the treatment of pneumococcal infections, gonococcal infections, staphylococcal infections including septicemia and osteomyelitis, meningococcal meningitis, colon ba-

Table 4. *Sulfadiazine* (2 (*para*-aminobenzene sulfonamide) pyridine)

Clinical Indications:

Beta-streptococcal infections of all types.
Pneumococcal infections of all kinds.
Gonorrhea, meningococcus meningitis.
Staphylococcal infections particularly osteomyelitis, sepsis, furunculosis and impetigo.

Possible Prophylaxis: Burns, otitis media, peritonitis and scarlet fever contacts.

Dosage:

Adults:
Initial Dose: 0.1 Gm. per kilogram body weight usually four to six grams.
Maintenance Dose: 1 Gm. every four to six hours until temperature has been normal for from 72 to 96 hours.

Children:

Same as for adults based on weight.
Absorption from the gastrointestinal tract is very good.
Diffusion into the fluids of the body is excellent.
Tends to be excreted slowly in the urine.

Toxicity:

Least of all the commonly used sulfanilamides which are absorbed from the bowel.

cillus infections as well as hemolytic streptococcal infections. It has been used prophylactically in burns, osteomyelitis, otitis media, peritonitis, compound fractures. The dose of sulfadiazine can be administered at slightly longer intervals than with other sulfa drugs, because the drug is absorbed more slowly and excreted less readily than they. The initial dose should be given on the basis of 0.10 Gm. per kilogram of body weight. The maintenance dose is about 1 Gm. every four to six hours and should be continued for at least three days after the fever has returned to normal. This drug is administered even more easily over long intervals than sulfathiazole and I much prefer it for the treatment of staphylococcal infections. Sulfadiazine is absorbed well from the gastrointestinal tract and diffuses readily into all the body fluids including the spinal fluid. It is, therefore, admirably suited to the treatment of infections of the central nervous system. The drug is excreted slowly by the kidneys and there are numerous reports in the literature concerning kidney complication due to the drug but, in most of these cases, the total urine output and reaction of the urine were not controlled, under which circumstances trouble can be anticipated no matter what drug is used. Toxicity is remarkably low. Only rarely does fever result and gastrointestinal symptoms are almost unheard of.

Sulfaguanidine.—This drug (table 5) is different from any of those previously discussed. It is not ab-

Table 5. *Sulfaguanidine* (Sulfanyl Guanidine Monohydrate)

Clinical Indications:

Disease: Bacillary dysentery and possible other bacillary infections of the gastrointestinal tract.

Possible Prophylaxis:

Preparation of the bowel for extensive surgery.
Treatment of carriers of bacillary infections.

Dose:

Initial Dose: 0.1 Gm. per kilogram body weight.
Maintenance Dose: 0.05 Gm. per kilogram divided into six doses and given every four hours until stools return to normal or the desired effect is obtained.
Absorption from the gastrointestinal tract is erratic but usually slight.
Diffusion into body fluids is as a rule poor.
Excretion by kidneys not great.

Toxicity:

Toxicity is not great, although in some patients side-effects are noted.

sorbed readily from the gastrointestinal tract and it is possible to get high concentrations of the drug in the bowels without getting a high titer in the circulating blood. This, of course, presents certain advantages and disadvantages. Sulfaguanidine is not a drug to be used for systemic infections but is extremely useful in the treatment of bacterial diseases of the gastrointestinal tract. It has been used successfully in the treatment of bacillary dysentery and typhoid fever. Its use has been suggested in ulcerative colitis, mucous colitis and the like. It may be used to advantage in preparing the gastrointestinal tract for extensive surgery such as large bowel resection. The drug has the ability to reduce the bacterial flora of the intestinal tract to practically nothing.

The initial dose for adults and children can be calculated on the basis of 0.1 gram per kilogram of body weight. The maintenance dose is estimated at 0.05 gram per kilogram of body weight. This amount is divided into six small doses and is given every four hours until the desired effect is obtained, e.g., until diarrhea is checked or until a satisfactory reduction in the intestinal flora has occurred.

Absorption is usually slight, but may be erratic. This is one of the chief difficulties encountered with the drug. In some patients the drug may be absorbed readily resulting in a relatively high blood concentration and a low concentration in the bowel, thus defeating the purpose for which the drug was given. Diffusion into the body fluids is, of course, poor if absorption from the bowel does not occur. Excretion from the kidney is not great unless the blood concentration becomes excessively high.

Toxicity is slight although untoward effects occasionally may be noted. One must be alert constantly for side effects, by the very token that they are not expected. It is well to check the blood concentration frequently when administering sulfaguanidine and to discontinue it and substitute sulfasuxidine if the concentration in the blood exceeds from 1 to 2 mg. per 100 cc.

Sulfasuxidine.—This drug (table 6) is perhaps the most recent addition to the list of useful sulfanilamide compounds. Like sulfaguanidine it is not

Table 6. *Sulfasuxidine (2-(N4 succinyl-sulfanilomido) thiazole)***Clinical Indications:**

Diseases: Bacillary dysentery and related diseases of the gastrointestinal tract.
Postoperative complications arising from intra-abdominal surgery.

Dosage:**Adults:**

Initial Dose: 0.25 Gms. per kilogram of body weight.
Maintenance Dose: 0.25 Gms. per kilogram divided into six doses per day.
Absorption from the gastrointestinal tract is very poor.
Diffusion into body fluids is very slight.
Excretion in the urine is slight.

Toxicity:

Practically none.

absorbed readily from the gastrointestinal tract and therefore its usefulness is limited to diseases localized in the gastrointestinal tract. It has been used successfully in the treatment of bacillary dysentery, typhoid fever, ulcerative colitis and related conditions. It may prove useful also in the treatment of complications arising from intra-abdominal surgery. The drug may be useful also in the treatment of the carrier state, e.g., typhoid or dysentery.

The drug is useful in preparing the gastrointestinal tract for major surgery. It is capable of reducing colony counts per gram of stools from millions to the low hundreds.

This drug, like sulfaguanidine, is not to be used in the treatment of systemic infections.

The adult and children's initial dose may be ascertained on the basis of 0.25 grams per kilogram of body weight. The maintenance dose is calculated for both adults and children on the basis of 0.25 grams per kilogram of body weight divided into six doses.

Absorption from the gastrointestinal tract is poor and this lack of absorption is apparently more consistent than with sulfaguanidine.

Diffusion into body fluids is minimal as is the excretion in the urine.

Toxicity from this drug is negligible.

Having discussed in a brief manner the six most commonly used of the sulfa compounds, let me turn to the toxic reactions which are encountered when these drugs are used. Almost all of the reactions which will be discussed can be encountered following the use of any of the sulfa drugs; it is merely the incidents which vary so it seems best to discuss the reactions without regard to the particular drugs although an attempt will be made to indicate which drugs are most often associated with which reactions.

In attempt to simplify the problem let me divide the reactions into the frequent and mild, the less common but more severe and, lastly, the infrequent but very severe. The first type of reactions does not as a rule constitute an indication for the discontinuing of the drug. The second may represent and the third always represents an indication for discontinuing the drug.

It should be stated here that patients who do not

tolerate one drug may tolerate another but this is not always true and patients are encountered occasionally who cannot take any of the sulfa drugs in sufficient amounts to make them of value in treatment.

Patients who have had a particular sulfa drug and have discontinued it are more likely to react unfavorably to its resumption than are those who are receiving the drug for the first time.

Mild Reactions.—(1) Circulatory: Cyanosis frequently is noted when sulfanilamide or sulfapyridine is used, but is rare with the other drugs in the series. (2) Neurocirculatory: Dizziness is also a troublesome side effect when these two drugs are used, but occurs less frequently with the others. (3) Gastrointestinal: Nausea and vomiting may occur with any of the sulfa compounds, but are most frequent with sulfapyridine, common with sulfanilamide, sulfathiazole and sulfaguanidine. They occur rarely when sulfadiazine and sulfasuxidine are administered. (4) Hemolytic anemia: A mild hemolytic anemia occurs late in about 3 per cent of patients to whom sulfanilamide and sulfapyridine are administered. It is extremely rare in cases treated with the other drugs under discussion and does not mean necessarily that the drug is to be discontinued unless the reaction progresses.

Moderately Severe Reactions.—(1) Acidosis: This is rare except when sulfanilamide is used and may be avoided by use of sodium bicarbonate. (2) Agranulocytosis: This occurs in about 0.5 per cent of the cases receiving sulfanilamide and in about 0.8 per cent of the cases receiving sulfapyridine. The rest of the drugs occasionally may cause a slight fall in the leukocyte count, but rarely a serious one. When agranulocytosis is marked prompt therapy is indicated. (3) Fever: This is a rather frequent untoward reaction occurring in about 10 per cent of patients receiving sulfapyridine and sulfathiazole and 5 per cent receiving sulfanilamide. Fever is much less common with the other compounds. Fever as a result of sulfa therapy is important because it so frequently causes the physician to try and push the drug instead of stopping it. (4) Hematuria: This side effect is noted most frequently with sulfapyridine, less commonly with sulfathiazole and rarely with the others. A satisfactory output of urine and the maintenance of alkaline reaction tend to reduce this untoward effect to a minimum. When hematuria occurs, typical crystals of the administered drug also may be present. (5) Leukocytosis, marked: This is a rather uncommon finding occurring more frequently with the administration of sulfanilamide and sulfathiazole and, when present, frequently is associated with anemia of the hemolytic type. This reaction to the sulfanilamides should cause one to discontinue the drug and administer fluids and blood. I have seen one such case erroneously diagnosed as myelogenous leukemia. (6) Arthritis: This is a rare complication of sulfa therapy but is occasionally encountered with the rash of sulfathiazole.

(7) Rash: This is a disturbing complication of sulfa therapy and is encountered most frequently with sulfanilamide and sulfathiazole. The rash may take any form and unless kept in mind the drug may be pushed harder when the rash develops on the supposition that the disease under treatment is progressing. The rash may take any form, erythema, macules, papules or pustules. It is general and diffuse and when present on the extremities is almost always bilateral. I have seen two cases of drug reactions which were diagnosed erroneously as bullous pemphigus; high fever was present and the patients were very ill. Withdrawal of the drug led to rapid and prompt recovery. The lesions sometimes may resemble scarlet fever or measles.

Severe Reactions.—These reactions if ignored or overlooked may lead to the death of the patient; when they develop the patient must be treated energetically and the drug withdrawn. Fluids must be forced, by mouth and parenterally, to force the elimination of the drug. Blood transfusions and oxygen therapy may be indicated. (1) Anuria: This reaction is seen most frequently with the use of sulfapyridine and sulfathiazole. About 0.3 per cent of the patients receiving these drugs will develop anuria. Anuria is uncommon with the other compounds but may occur with sulfadiazine. The kidneys should be catheterized and washed out repeatedly. (2) Anemia: Acute, severe and progressive hemolytic anemia rarely is seen with any of the compounds but is more frequently encountered with sulfanilamide. When this drug is used about 0.2 per cent of the patients will develop this type of anemia. If the anemia is going to develop, it usually will do so during the first few days of the treatment and, if the patient tolerates the drug for five days, there will be little danger that this severe type of hemolytic anemia will develop. (3) Hepatitis. (4) Jaundice. (5) Neuritis. (6) Purpura hemorrhagica are rare but none the less serious complications of sulfa therapy. I fortunately have seen few of these in my own experience but there are numerous case reports in the literature.

Reactions to sulfa therapy are common and may lead to complications more serious than the original disease. Reactions can be avoided best by careful control of the patients. The drug should not be given to uncooperative patients or patients who may not return for the necessary follow-up studies. Patients must be told to take a specific amount of fluids, usually from 2,000 to 3,000 cc. a day, and they should be made to measure urinary output. If it falls below 1,000 cc., they should return at once and bring a specimen of urine with them. Blood concentrations as well as blood counts should be done frequently.

The patient should be told to be on guard for complications and signs of toxicity. Sudden increase in temperature out of proportion to the patient's illness and appearance should lead one to suspect sulfa intoxication.

DISCUSSION

While there can be little doubt that the sulfa drugs have resulted in a tremendous advance in therapy, there is also little doubt that their introduction has added tremendously to the physician's responsibility. He must be aware of the advantages and disadvantages of the drug. In addition, he must be fully aware of their dangers and how to avoid them. Now, more than ever before, careful bacteriologic diagnosis is necessary since the sulfa compounds have definite limitations and their erroneous use exposes the patient to real dangers. The administration of the sulfa compounds makes careful observation of the patient obligatory: frequent urine analysis as well as erythrocyte, leukocyte and blood concentration studies are necessary. To neglect these things is to court disaster. The chief abuses of sulfa compounds, today, lie in their indiscriminate use under faulty supervision.

For the most part, the sulfa drugs have not been found useful in virus infections, but bacterial complications sometimes are associated with or follow such infections and then the sulfa drugs may be indicated.

CONCLUSION

Sulfa drugs must be given with discretion. Careful bacteriologic studies are essential. Constant supervision of the patient under sulfa treatment is imperative. The drug must be continued over a considerable period of time after the fever and the symptoms have returned to normal.

The sulfa drugs have definite indications and contraindications and these must be observed strictly.

METHOD FOR DETERMINATION OF SULFA DRUGS IN
BLOOD AND URINE

The following procedure is recommended for the determination of the concentration of the various sulfa compounds in the blood. The conversion factors are determined on the basis of the molecular weight of the derivative as compared to sulfanilamide when sulfanilamide is used as a standard. The following formula will give the conversion factor:

Sulfanilamide derivative (Molecular Weight)
= Conversion factor

Sulfanilamide (Molecular Weight)

Example:

Mol. Wt. Sulfapyridine = 249 1.45

Mol. Wt. Sulfanilamide 172

Sulfanilamide: Bratton and Marshall as modified by M. Bodansky, Technical Bulletin of Reg. of Med. Tech. 1:151 (Nov.) 1940.

Reagents:

1. Trichloroacetic acid 15 per cent
2. Sodium nitrite 0.1 per cent
3. N-(1-naphthyl) ethylenediamine dihydrochloride 0.1 per cent
(This solution should be kept in a dark colored bottle.)

Saponin solution 0.5 gms./liter

5. Hydrochloric acid 4N

6. Ammonium sulfamide 0.5 gms./liter

7. A stock solution of sulfanilamide in water containing 200 mg. per liter. This solution can be kept for several months in the refrigerator. The most convenient standards to prepare from the stock solution are 1, 0.6, and 0.2 mg. per cent. To prepare these

5, 3, and 1 cc. of the stock solution plus 18 cc. of the 15 per cent solution of trichloroacetic acid are diluted to 100 cc.

Method:

Blood (Whole)	2 cc.
Saponin	30 cc.
Trichloroacetic acid	8 cc.
Allow to stand for several minutes and filter.	
Filtrate	
Sodium nitrite	10 cc.
Ammonium sulfamate	1 cc.
N-(1-naphthyl) ethylenediamine dihydrochloride ..	1 cc.

Compare colorimetrically with that produced by treating, similarly 10 cc. of the standard solution (see preceding). It is advisable to match the color of the unknown with a standard of approximately the same color intensity. Accordingly, it is recommended that the three standards (1.0, 0.16, and 0.2 mg. per cent be set up.

Calculation:

$$\frac{R}{S} \times \frac{1}{20} \times \frac{10}{100} \times 100 \text{ cc. (depending on concentration or standard used.)} = \text{mg. sulfanilamide}$$

The intensity of the color developed may be measured in the photoelectric colorimeter using Filter 540 mu, green filter, and referred to an accurately prepared calibration chart.

The above procedure may be used equally well for the determination of other sulfa drugs by multiplying the answer obtained on the calibrated sulfanilamide chart by the appropriate conversion factor listed below:

Conversion factors:

Sulfapyridine	1.47
Sulfanilamide	2.07
Sulfathiazole	1.48
Sulfamethylthiazole	1.54
Sulfadiazine	1.45
Sulfaguanidine	1.24
Sulfasuxidine	2.06

Total Sulfanilamide:

Reagents:

1-7 as in above technique.

Method:

Filtrate 10 cc.
4 N HCl 0.5 cc.
Heat in boiling water bath for 1 hour. Cool and adjust volume to 10 cc. From this point the procedure is as stated above for determining free sulfanilamide.

Procedure for Urine: Dilute urine to contain from 1 to 2 mg. sulfanilamide per 100 cc. To 50 cc. of diluted protein free urine, add 5 cc. of 4N hydrochloric acid and bring volume up to 100 cc. Treat 10 cc. of this with sodium nitrite, ammonium sulfamate and the coupling reagent as used in the blood determination and read in colorimeter. To determine the total sulfanilamide hydrolyze 10 cc. of the diluted urine by heating in boiling water bath for one hour and repeat as above.

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634 North Grand Boulevard.

"On the basis of our results we have every reason to believe that many women with no obvious cause for their sterility suffer from latent genital tuberculosis [of the organs of reproduction]," E. Rabau, M.D.; I. Halbrecht, M.D., and J. Casper, M.D., Petah-Tiqua, Palestine, declares in the July 17 issue of *The Journal of the American Medical Association*.

Their findings are based on studies of 208 sterile women. "We have found," they report, "tuberculous endometritis [inflammation of the membrane lining the womb] in about 10 per cent of our cases. But it is quite possible that in more than 10 per cent a latent genital tuberculosis was present and could have been proved if we had at our disposal other diagnostic methods than strip curettage. . . ."

Their investigation was made by studying small samples of the membrane lining of the womb, obtained by means of a scraper or spoon, known as a curet.

They found 20 cases of tuberculous endometritis. In none of these cases had tuberculosis previously been suspected.

CASE REPORTS OF BARNES HOSPITAL

CLINICAL AND POSTMORTEM RECORDS USED IN WEEKLY
CLINICOPATHOLOGIC CONFERENCES AT BARNES
HOSPITAL, ST. LOUIS

W. BARRY WOOD, JR., AND ROBERT
A. MOORE, M.D., Editors

CASE 22

PRESENTATION OF CASE

A white male baker, aged 54, was admitted to Barnes Hospital on May 5 and died on August 15, 1938.

Chief Complaints.—Fever, chills, weakness, loss of weight.

Family History.—Irrelevant.

Social History.—The patient was born in Hungary where he lived until the first World War. He became an army cook and traveled with troops until he was "shell shocked." He recalled little about his army experience thereafter. Apparently, he did not enter the Orient or the tropics. He came to the United States in 1922 and had worked since as a baker. His habits appeared to be good and his financial circumstances adequate.

Past History.—Other than the patient's war experience, the only significant illness occurred fourteen years before admission when he suddenly fainted. Shortly afterward he passed a copious black stool. There were no further symptoms at any time and the patient did not interrupt his work. There is no history of rheumatic fever and none of a primary penile sore.

Systemic History.—Headaches had been frequent for three or four years previous to admission. During this period, according to his wife, his feet would shake frequently during sleep.

Present Illness.—About five months before admission the patient began to fatigue easily and felt continually drowsy. He soon began to have chilly sensations and fever and he perspired profusely. He remained in bed for one week, attended by his physician who diagnosed "grippe." He then returned to work but after one week all his symptoms reappeared and progressed, and he again went to bed. After a few weeks a diagnosis of undulant fever was made and confirmed by blood studies in the laboratory of a competent specialist. A positive Wassermann reaction was then discovered. Oral and hypodermic medication was administered but continued fever, chills, weakness, drowsiness, sweating and a weight loss of 30 pounds since onset induced him to enter Barnes Hospital for diagnosis and treatment.

Physical Examination.—Temperature was 38.2 C., pulse 90, respiration 20, blood pressure 120/80. The patient appeared chronically ill with evident weight loss. He was somewhat drowsy and perspired freely. The pupils were contracted and apparently equal. They reacted to accommodation but not to light. The eyegrounds appeared normal. The tongue showed a fibrillary tremor. The tonsils

were large and cryptic. A moderate amount of pulmonary emphysema was present. There were a few crepitant rales at both lung bases which did not clear on coughing. The heart apparently was not enlarged. The rhythm was regular, rate 90. There was a systolic murmur over the aortic area; transmission was not noted. The aortic second sound was slightly accentuated. No abdominal viscera or masses were felt and there was no tenderness. The prostate was not notable. A large epitrochlear lymph node was felt on each side but there was no other lymphadenopathy. The left knee jerk was depressed; an ankle clonus was present on the right and there was slight swaying in the Romberg position.

Laboratory Findings.—Blood count: red blood cells 4,270,000, hemoglobin 82 per cent, white blood cells 4,000; differential count: "stab" forms 14 per cent, segmented forms 47 per cent, lymphocytes 35 per cent, monocytes 4 per cent; no malaria parasites found. Urinalysis: specific gravity 1016, albumin plus, sugar negative, microscopic, no blood cells or casts. Blood serology: Kahn test 4 plus, Wassermann 4 plus. Agglutination tests were negative for the typhoid and brucella group. Blood culture was sterile. Blood chemistry: sugar 86 mg. per cent, urea nitrogen 17 mg. per cent, calcium 8.7 mg. per cent, phosphorus 3.3 mg. per cent, phosphatase 4 Bodansky units; total proteins 7.7 grams, albumin 3.1, globulin 4.6. Takata-Ara test was strongly positive; formol-gel test was strongly positive. Stool examination: guaiac plus, no ova or parasites found. Spinal fluid: (no increased pressure or block) 3 cells, Pandy's test negative, proteins 88 mg. per cent; Wassermann 1 plus, 3 plus, 4 plus in dilutions of cholesterinized antigen, colloidal gold curve 5555555553. Skin tests: Brucella antigen negative; tuberculin test, purified protein derivative first and second strengths, negative. Roentgenograms of the chest showed the heart enlarged 2 degrees to the left with widening of the superior vena cava on the right. There was peribronchial fibrosis and pulmonary infiltration and fibrosis in the right lower lobe near the hilus. Electrocardiogram showed only left axis deviation.

Course in Hospital.—During the patient's residence, fever of a swinging type was continuous, varying from 38 to 40 C. The patient had an occasional chill and was drowsy most of the time. Signs and symptoms present on admission persisted. Many laboratory examinations were repeated and those that showed alteration were the blood count which at one time showed 3,550 white cells and 2 myelocytes, 6 juveniles, 32 "stab" forms, 40 segmented forms, 10 lymphocytes and 10 monocytes. The highest recorded white cell count was 6,200. At no time was there marked anemia. The urine showed 2 plus albumin at times. A few red blood cells were found occasionally, many on two examinations, and a positive guaiac test was frequent. Sternal bone marrow showed 6.5 per cent plasma cells, occasionally in clumps, but nothing otherwise abnormal.

Kymogram of the heart showed small movements of the left ventricle and aorta. The descending aorta filled slowly. An interpretation of myocardial damage and questionable dissecting aneurysm of the aorta was made. Bronchoscopic examination revealed only general hyperemia of the mucous membranes. Bronchography was indeterminate. Open film of the abdomen showed no abnormality. Biopsy of inguinal lymph nodes which had enlarged slightly showed fibrous tissue proliferation obscuring the normal architecture of the gland, apparently reaction to nonspecific inflammation. The total blood proteins at one time were 7.8 gm. with globulin 5.2. Three blood cultures in all were negative. Proctoscopic examination showed only a red mucous membrane.

Under sulfanilamide, quinine and supportive therapy there was no improvement. The systolic murmur in the heart persisted. A few weeks before death the rales at the bases increased somewhat, there was slight ankle edema and the liver became palpable. The patient was digitalized. Gradually he became more drowsy, then stuporous. The urea nitrogen rose steadily to a level of 117 mg. per cent and the patient died in coma.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: This patient evidently had syphilis which involved the central nervous system. He had a fever which, during his lifetime, was unexplained. The chief problem is to identify the cause of this fever. Before he came to the hospital, his history states, he was seen by a specialist in undulant fever who made a diagnosis of brucellosis. When he entered the hospital such criteria as skin tests and agglutination tests were negative. Dr. Harford, do you feel that undulant fever may thereby be ruled out?

DR. CARL HARFORD: I do not think it can be ruled out completely, but it is unlikely.

DR. ALEXANDER: What about agglutination tests in a man who has been ill for several months with undulant fever?

DR. HARFORD: There have been reports of patients with chronic undulant fever who had negative agglutination tests.

DR. ALEXANDER: Do you feel there is any symptom in this case other than the fever that is characteristic of the disease? Or is this fever, without remission, characteristic?

DR. HARFORD: I would expect remissions in the fever.

DR. ALEXANDER: We may consider undulant fever then as but a possibility. Is there anything in favor of this diagnosis?

DR. HARFORD: The report of the specialist.

DR. ALEXANDER: Against it are the negative skin and agglutination tests. Do you agree, Dr. Wood?

DR. W. BARRY WOOD: It is true that in undulant fever the agglutinins may "burn out" during the course of the disease, although this is uncommon. But, substantially, I agree that the negative agglu-

tination tests are against a diagnosis of undulant fever.

DR. ALEXANDER: What about the skin tests? I believe that skin tests occasionally may be negative in undulant fever, as in tuberculosis, although this is unusual. The symptoms, too, are negative. Does anyone disagree? Dr. Harford, have you any other suggestions as to what may have caused this unexplained fever?

DR. HARFORD: One thing, which did not come to my mind until Dr. Wood suggested it, is a bacterial endocarditis.

DR. ALEXANDER: What is there in favor of that diagnosis?

DR. HARFORD: The patient had a systolic murmur at the aortic area.

DR. ALEXANDER: Do you feel that the systolic murmur was organic—that is, a valvulitis?

DR. HARFORD: It is difficult to say, not having heard it.

DR. ALEXANDER: The man had syphilis. In the kymogram there was a slow filling of the aorta and in the roentgen ray picture a widening of the aorta. Might it be the murmur of an aortitis?

DR. EDWARD MASSIE: It could easily have been the murmur of an aortitis. The widened aorta would fit in.

DR. ALEXANDER: Could it have been a valvulitis?

DR. MASSIE: I would prefer to call it an aortitis. I agree that a diagnosis of bacterial endocarditis is tenable. For that, one must presuppose a damaged valve. It is rarely superimposed on syphilis.

DR. ALEXANDER: Then it may be assumed that he had a preexisting lesion on the aortic valve. What else may go with this?

DR. MASSIE: He certainly had red blood cells in the urine, and he had three negative blood cultures, all taken within a period of two weeks. Since the patient was in the hospital for four months, these negative blood cultures cannot be considered as ruling out the diagnosis of bacterial endocarditis. He lost weight, his fever was characteristic and, although we do have an inverted albumin-globulin ratio, we had a patient not long ago with that same finding who turned out to have bacterial endocarditis.

DR. ALEXANDER: There is a striking resemblance between the symptoms in this case and those in the case you mention. In that case the high globulin was attributed to syphilis so perhaps in this case it could also be attributed to syphilis. This man's white count became very low at one time although he had a shift to the left. Does this fit in?

DR. MASSIE: Yes, with the shift to the left, it does.

DR. ALEXANDER: Bacterial endocarditis seems to be a plausible diagnosis. What else may fit in with it?

DR. MASSIE: The terminal uremia.

DR. ALEXANDER: What about his cerebral signs? This man had signs which ordinarily one would attribute to cerebrospinal syphilis, but might they not be caused by an embolic phenomenon? Dr.

Rioch, may a depressed knee jerk and ankle clonus be caused by an embolus?

DR. DAVID RIOCH: Statistically, they would more likely be caused by syphilis.

DR. ALEXANDER: Are they at all in keeping with embolic phenomena?

DR. RIOCH: I would rather expect an increase of the knee jerk.

DR. ALEXANDER: Are there any other suggestions? Dr. Massie, would you venture to suggest what organism may have caused this subacute or acute bacterial endocarditis, engrafted on a damaged valve?

DR. MASSIE: I would suggest the streptococcus, because of its great frequency in bacterial endocarditis, streptococcus viridans, specifically.

DR. ALEXANDER: A negative blood culture is not so unusual in the presence of Streptococcus viridans, is it? Dr. Sale, have you any suggestions as to the source of this man's fever?

DR. LLEWELLYN SALE: I think syphilis involving the liver might cause this type of fever.

DR. ALEXANDER: That is true. However, this man's liver was not palpable and he had no signs of hepatic decompensation other than the high globulin, although the total proteins were not particularly low. Are there other suggestions as to the source of the fever?

DR. WOOD: How would one explain the nephritis on the basis of a diagnosis of syphilis?

DR. SALE: He did not have the type of nephritis that one would expect with marked involvement of the vascular system. Do you not think the terminal uremia might have been a liver manifestation?

DR. ALEXANDER: That is in keeping. Are there any other suggestions?

DR. HAROLD BULGER: A thrombophlebitis of the portal vein.

DR. ALEXANDER: Leading to a liver abscess?

DR. BULGER: Yes, multiple liver abscesses.

DR. ALEXANDER: I think the observation that multiple liver abscesses may give rise to fever has come before this conference before. Dr. Barr some time ago reported three cases of unexplained fever and in each the diagnosis was multiple liver abscess from a thrombophlebitis of the portal vein. This must always be considered.

DR. MASSIE: Would you attribute to chronic infection the 6 per cent plasma cells in the sternal bone marrow?

DR. ALEXANDER: I am sorry that Dr. Moore is not here. When such a question arises, he usually is inclined to explain that chronic infection may give rise to plasma cells up to 5 per cent.

DR. EDWARD H. REINHARD: This would be considered within normal limits.

DR. ALEXANDER: A few months ago at this conference we had the case of a man with unexplained fever, and that man had tuberculous pericarditis. One must always think of tuberculosis. In this case there are few signs to indicate tuberculosis. A suggestion was made that the case might be lupus

erythematosus disseminatus and there is much in favor of it. This diagnosis was suggested because of the high globulin and the positive formol-gel test. The man had pulmonary signs, continued unexplained fever, a high globulin and a leukopenia, all of which are in keeping. What is against a diagnosis of lupus erythematosus, Dr. Wood?

DR. WOOD: The patient's sex and age.

DR. ALEXANDER: Yes. It usually occurs in young women and this is a middle aged man. He had no arthralgia, which is common. Are there any other suggestions? Someone suggested abdominal Hodgkin's disease which may give rise to a fever and leukopenia with shift to the left. Dr. Wood, what is your suggestion?

DR. WOOD: I think one might add periarteritis nodosa, to make the list of possibilities complete.

DR. ALEXANDER: In keeping with such a diagnosis would be what?

DR. WOOD: The fever and the nephritis.

DR. ALEXANDER: He had fever, red blood cells in his urine and a high terminal urea nitrogen. What else?

DR. WOOD: The cerebral symptoms are in keeping with this diagnosis.

DR. ALEXANDER: Yes, he had headache and certain localized symptoms. He had other vascular changes. Dr. Massie, this man had a number of signs referable to the heart: an abnormal kymogram, a heart enlarged 2 degrees on the roentgen ray film, what appeared to be an aortitis and cardiac decompensation. Although his electrocardiogram was not particularly impressive, do you feel that this man may have had a fair amount of vascular damage, either on a syphilitic or some other basis?

DR. MASSIE: I do think he had heart disease because of the cardiac enlargement and somewhat widened aorta. We know that he had syphilis, a systolic murmur and other signs that suggest aortitis. If we had heard a diastolic murmur we could be more sure. We assume that he had some other disease and, if this was subacute bacterial endocarditis, we can be sure that it would result terminally in some degree of failure, after four months of debilitating disease.

DR. ALEXANDER: Apparently I cannot persuade you that he had any particular vascular disease, which is so common in periarteritis nodosa and which may reflect itself in the kidneys.

DR. MASSIE: Is not the "hypoeosinophilia," as Dr. Reinhard called it, against this diagnosis? I do not mean to say that eosinophilia is always found, but it seems to me that the lack of it is against periarteritis nodosa.

DR. ALEXANDER: An eosinophilia is present in not more than 20 per cent of cases of periarteritis nodosa. Characteristically, there is a high leukocytosis, usually around 20,000, and this man's was 2,600. But leukopenia is not an unknown finding in periarteritis nodosa. The lowest count recorded is around this figure. It is unusual, but possible, and the presence or absence of eosinophilia is not relevant.

DR. HARFORD: You discussed the possibility of tuberculosis. In that case of tuberculous pericarditis the first strength of purified protein derivative gave a positive skin test. In this case it was negative. Unless the test was made shortly before death in this case, it would be strongly against tuberculosis.

DR. BULGER: Syphilis of the lung and syphilis of the mediastinum may be suggested. The commonest lesion in syphilis of the lung is at the right base.

DR. ALEXANDER: Dr. Moore, have you anything to say to this suggestion?

DR. SHERWOOD MOORE: We interpreted that enlargement as dilated superior vena cava, but it might be an infiltrating lesion of any sort. As for the heart, one might forecast a 4 plus Wassermann from looking at the roentgen ray film.

DR. ALEXANDER: We might then have a lesion of the mediastinum of syphilitic origin.

STUDENT: What about the positive guaiac test on the stool?

DR. ALEXANDER: It was rather weakly positive. There were several positive guaiac tests on the urine. It appears from these remarks that bacterial endocarditis and periarteritis nodosa are the two diagnoses that fit the case best.

DR. BULGER: Would the hemorrhage described some years before be relevant to periarteritis nodosa?

DR. ALEXANDER: Hardly, but that happened many years ago.

DR. HARFORD: Apropos of the suggested diagnosis of malaria, may I mention that it is well known that a false positive Wassermann occurs in malaria. The question arose in my mind as to whether or not there might also be a false positive spinal fluid. There are two cases recorded of a false positive Wassermann in the spinal fluid in malaria. However, the malarial parasites were not found and the disease was refractory to quinine therapy.

DR. WOOD: Dr. Alexander, which of these diagnoses do you favor?

DR. ALEXANDER: I am slightly inclined to favor periarteritis nodosa with bacterial endocarditis a very close second.

CLINICAL DIAGNOSIS

Fever of undetermined origin.

DR. ALEXANDER'S DIAGNOSIS

Periarteritis nodosa (?).
Bacterial endocarditis (?).

ANATOMIC DIAGNOSIS

Histoplasmosis involving cusps of aortic valve, kidneys, spleen, liver, pancreas and brain.

Thrombi in small arteries and veins of spleen, kidney and intestinal wall.

Infarcts of the spleen.

Syphilitic aortitis.

Syphilitic valvulitis of aortic valve.

PATHOLOGIC DISCUSSION

DR. MARGARET SMITH: Unfortunately, at the time this autopsy was done in 1938, no special cultures were made and the causative organism—*Histoplasma capsulatum*—was not isolated. However, it has been identified clearly in the sections of the vegetation on the valve and in one of the small granulomatous lesions. So far as we are aware, an endocarditis as a part of histoplasmosis has never been recorded in the medical literature.*

DR. ALEXANDER: I think it is an interesting circumstance that at these conferences, in the space of a few months, we have had two cases of endocarditis, one caused by an unusual form of actinomycoses and this one caused by histoplasma, also very rare. It would have been very difficult to have made this diagnosis without a culture to identify the organism. I do not know whether or not routine blood cultures are done on Sabouraud's medium.

DR. MARGARET SMITH: It is possible to culture these on agar, but the organisms sometimes do not show up for from twenty to thirty days and they might easily be missed. This man's history of eight months' illness is characteristic.

CASE 23

PRESENTATION OF CASE

The patient, a 62 year old, single, white female, entered Barnes Hospital four times. Her history is separated into two phases. One includes her first three admissions between September 1930 and September 1932 and is stated briefly. The second involves her last admission.

First Hospital Admission.—The patient entered on the Surgical Service on September 3 and was discharged on December 30, 1930.

Chief Complaint.—Abdominal pain, vomiting.

Family History.—Father died from a stroke when along in years. Mother died from cancer of the breast. One brother died at the age of 25 from pulmonary tuberculosis.

Social History.—The patient worked as a clerk. No other information was stated.

Past History.—The patient had frequent tonsillitis and a tonsillectomy was performed in 1923. A left inguinal hernia, for which a truss was worn, had been present for several years. During the last seven or eight years she had suffered several attacks of facial neuralgia. Otherwise she apparently had been in good health.

Systemic History.—There had been slight impairment of vision for the previous six years. Upper respiratory infection was frequent.

Present Illness.—Three days before admission, the patient suddenly developed severe pain throughout her abdomen. This continued with increasing severity. Within a few hours she began to vomit. Emesis continued for forty-eight hours when fecal

*One week after this conference was held, a similar case was reported in the *Journal of the American Medical Association*.

material appeared. Bowel movements ceased. A physician gave one enema which produced no fecal return. He then sent her to the hospital.

Physical Examination.—Temperature was 37.7 C., pulse was 82, respiration 18 and blood pressure 140/80. The patient was well nourished and developed. She apparently was not in acute distress. Examination of the head, neck, heart and lungs showed them normal. The abdomen was distended and there was generalized tenderness. No organs or masses were palpable nor were signs of fluid elicited. No hernia was felt.

Laboratory Findings.—Blood count: red blood cells 5,100,000, hemoglobin 90 per cent, white blood cells 14,000; differential count: "stab" forms 2.5 per cent, segmented forms 63 per cent, lymphocytes 32 per cent, mononuclears 2.5 per cent. Urinalysis: specific gravity, not sufficient, acid, trace albumin, sugar negative, microscopic negative. Kahn test negative. Blood nonprotein nitrogen 32 mg. per cent.

Course in Hospital.—An exploratory laparotomy was done promptly and a strangulated right femoral hernia containing three inches of gangrenous ileum was found. A left femoral hernia likewise was present. An ileo-ileostomy was done and the hernia repaired. The postoperative course was stormy. Pneumonia developed immediately with consolidation of the entire right lung. The patient's condition became critical and convalescence was slow. The temperature remained elevated for some weeks and a large abscess of the lower abdominal wall eventually appeared. This was evacuated and thereafter the patient recovered. Anaerobic streptococci were cultured from the abscess. Repeated urinalyses revealed albumin varying from 1 plus to 4 plus, frequent casts and many white blood cells at times. No red cells appeared. The final specimen contained 1 plus albumin and many white blood cells. Blood nonprotein nitrogen remained at 32 mg. per cent and blood chlorides were 530 mg. per cent.

Second Hospital Admission.—The patient entered the Neurosurgical Service on April 6 and was discharged on April 13, 1931.

Interval History.—Recovery from operation a year previously apparently had been complete and the patient had resumed work. She entered for relief of her facial neuralgia of nine years duration. It had been treated by repeated alcohol injections which no longer gave relief.

Physical Examination.—The physical findings remained unchanged since previous discharge with the exception of hyperesthesia to pin prick during a paroxysm of pain over the distribution of the mandibular portion of the right fifth cranial nerve. The previous abdominal incisions were well healed.

Course in Hospital.—A diagnosis of trifacial neuralgia was made. A craniotomy was done and the posterior root of the right gasserian ganglion was severed. Recovery was uneventful. Laboratory findings, including three urinalyses, were all within normal limits.

Third Hospital Admission.—This was a reentry to the Surgical Service from September 5 to September 13, 1932.

Interval History.—Since last discharge the patient had felt entirely well. About six weeks previous to admission she discovered a small mass in the left breast which gradually enlarged.

Physical Examination.—Temperature was 37 C., pulse 82, respiration 18, blood pressure 140/80. The only change since the last admission was some anesthesia to pin prick over the right face and the presence of a hard nontender mass about 2 cm. in diameter in the left breast.

Course in Hospital.—At operation a grossly malignant nodule 1.5 cm. across was exposed. A radical left mastectomy was performed. Recovery was uneventful. One urinalysis was recorded which showed many white blood cells. Other laboratory reports were normal.

Fourth Hospital Admission.—The patient, 62 years of age, entered the Medical Service on March 10 and died March 14, 1943.

Interval History.—The patient was in coma and information secured from a relative was meager. None related to the interval since previous discharge until forty-eight hours before admission when the patient complained of sore throat and generalized muscle soreness. The following night she locked herself in her room where she was found unconscious the next morning.

Physical Examination.—Temperature was 39.2 C., pulse 120, respiration 43, blood pressure 95/75. The patient was unconscious. The head was drawn back slightly. Cheyne-Stokes respiration was present. Many petechial spots were scattered over the entire body. One large purpuric spot appeared over the left anterior chest. The sclerae were injected. There were no pupillary changes. Extraocular movements were normal. Both disk margins were indistinct. There was an old scarred perforation of the left ear drum but no discharge. Many petechial spots appeared in the buccal mucosa. The neck was extended slightly and was stiff. The scar of a left mastectomy presented. The lungs and the heart showed no abnormal signs other than tachycardia. There was a large ventral hernia over the vertical postoperative scar. No organs or masses were felt. Pelvic and rectal findings were normal. Positive neurologic findings included increased superficial tendon reflexes, absent abdominal reflexes, a questionable Babinski sign on the left and positive bilateral Kernig and Brudzinski signs.

Laboratory Findings.—Blood count: red blood cells 5,520,000, hemoglobin 17.5 gm., white blood cells 19,800; differential count: myelocytes 4 per cent, juvenile forms 12 per cent, "stab" forms 31 per cent, segmented forms 43 per cent, lymphocytes 8 per cent, monocytes 2 per cent. Urinalysis: acid, specific gravity 1025, albumin 4 plus, sugar negative, microscopic, many granular casts, occasional red blood cells and white blood cells. Spinal fluid: initial pressure 220 mm.; right compression, no rise;

left, 250 mm. with slow return; cloudy, 4,500 cells; 82 per cent polymorphonuclear forms; total protein 960 mg. per cent, chlorides 645 mg. per cent; sugar 7 mg. per cent; Wassermann, anticomplementary, colloidal gold curve 000355555. Smear: Gram-negative intracellular diplococci. Culture: meningococci. Blood nonprotein nitrogen was 60 mg. per cent.

Course in Hospital.—The patient was immediately given sulfamerazine and intravenous injections of antimeningococcus serum. This form of therapy was continued until the blood concentration of merazine reached 20.2 mg. per cent and the spinal fluid concentration 10 mg. per cent. A total of 150 cc. of antimeningococcus serum was given. The patient responded poorly and remained in coma until her death. Repeated urinalyses showed albumin from 2 plus to 4 plus, many casts and occasional red blood cells. The blood nonprotein nitrogen gradually increased to 125 mg. per cent. The blood CO₂ combining power at its lowest was 41.6 volumes per cent and rose with intravenous injections of sodium lactate. Repeated lumbar punctures showed little alteration in the character of the fluid which on the day previous to death showed 4,000 cells with 96 per cent polymorphonuclear forms. Culture was not recorded. Some edema of the sacrum developed. No significant neurologic changes occurred until two hours before death when the patient's mouth was noted to be drawn to the right. At that time, respiration, which at times had been irregular with momentary cessations, became more so and the pulse gradually failed. During the three and a half days' stay in the hospital the temperature ranged from 37.6 to 39.4 C.

CLINICAL DISCUSSION

DR. ALEXANDER: The problem in this case is not so much one of primary diagnosis but of the factors contributing to her death. This patient was well enough to work some six days before death. If she was taken sick on Monday, for example, she died early the following Sunday morning—a very rapid course. There is no question but that she had cerebrospinal infection. In order to trace what may have happened in this case, let us orient ourselves and consider what does happen when man is exposed to this organism. Dr. Harford, when an individual acquires an air-borne meningococcus infection, and harbors the organisms in his nasopharynx, what happens from then on?

DR. CARL G. HARFORD: There is some controversy as to just what happens. One school of thought declares that the organism gets into the blood stream and produces septicemia and, then, secondarily, produces meningitis. The other school says that the organism penetrates to the subarachnoid space along the olfactory nerve. Many people who acquire the organism and harbor it in the nasopharynx do not develop the disease at all.

DR. ALEXANDER: Certainly a great many do develop a bacteremia. Do you believe that this patient had a bacteremia?

DR. HARFORD: In this history the results of blood culture have not been reported. Was any blood culture taken?

DR. EDWARD H. REINHARD: I am quite sure they were negative.

DR. ALEXANDER: What about the eruption?

DR. HARFORD: I think the signs make her having had a bacteremia likely.

DR. ALEXANDER: How long do these organisms remain in the blood? If the patient has a blood stream infection and then a meningeal infection, does the organism remain a considerable length of time in the blood?

DR. HARFORD: It can remain in the blood for a day or so.

DR. ALEXANDER: Is that correct, Dr. Wood?

DR. W. BARRY WOOD: The blood culture is seldom positive after the first week, except in cases of chronic meningococcemia.

DR. ALEXANDER: Is there any evidence as to why the blood clears? In typhoid fever antibodies appear in the first week, in pneumonia on about the sixth day.

DR. HARFORD: The only information I can give is the general information as to what happens to all bacteria. We know that there is phagocytosis of some degree.

DR. THEODORE WALSH: Normal adults have a high titer of antibodies against meningococci. That natural immune factor is probably what clears the blood.

DR. ALEXANDER: She did have a very intense eruption, which is common in the epidemic form of meningitis.

DR. WOOD: The eruption, I think, actually is caused by the bacteremia because meningococci may be isolated from the petechial lesions.

DR. ALEXANDER: Here is a patient, then, sent to the hospital within thirty-six hours of her first recorded infection. She may have had organisms in the blood, probably did. She was treated reasonably early, yet she died. Was the treatment adequate, is the next question. She received sulfamerazine and received within forty-eight hours 150 cc. of antimeningococcus serum intravenously. Do you feel that would be adequate for even a severe case?

DR. WOOD: Yes, I do, because with drug treatment alone recent studies have shown that case fatalities may be as low as 5 per cent. Here the death was probably not caused by the meningococcus infection alone but by complicating factors.

DR. ALEXANDER: When the spinal fluid was taken the day before her death, there were 4,000 cells, 96 per cent polymorphonuclear forms. The culture was negative. Would one expect such an elevated cell count after several days of treatment?

DR. WOOD: I think that is often the case. Dr. Hageman has followed the patients with meningococcus meningitis treated this winter at the Isolation Hospital. He, no doubt, can answer this question.

DR. PAUL HAGEMAN: I believe that the cell count

may remain elevated for a number of days after a negative culture has been obtained. It has been brought to our attention that a negative culture, done in a routine manner, does not necessarily mean a sterile spinal fluid for, in such cases, cultures made on chick embryo may be positive.

DR. ALEXANDER: Then may we dismiss meningococcus infection as having a primary role in causing death in this case and go on to something else? Or is there indication that this infection did play a major part? The point I want to bring out is that when the right jugular vein was compressed there was no increase in cerebrospinal fluid pressure. Does this imply a block, Dr. Moore?

DR. CARL MOORE: Not necessarily.

DR. ALEXANDER: Does it make you suspect that she had a block?

DR. MOORE: I would prefer to put my answer in terms of what Dr. Sachs has been emphasizing recently: that one cannot get adequate jugular pressure by the ordinary method. The fact that this patient did have a rise in cerebrospinal pressure on the left would make me doubt very seriously that there was a block.

DR. DAVID M. RIOCH: There are several points to be considered. The pressure readings in lumbar puncture on a comatose patient are difficult to obtain. In the second place, the system was apparently not free. The rise and fall from the left jugular compression was slow. Four thousand cells would have been enough to slow the flow of the fluid somewhat, but it is more likely that the tag of arachnoid or meninges over the point of the needle may explain the slow rise and fall. If the operator had had more cooperation from the patient it would have been better to see that the system was free before attempting pressure readings. There is no evidence of block. The subarachnoid space is clear, because the slowness of the rise and fall is more likely to affect the system. There arises the question of the adequacy of pressing on the jugular vein. In this case, since we have no evidence that the system was free, if they could have given abdominal compression and gotten a good rise and fall, and then jugular pressure and slow rise and fall, then a block in the spinal cord would be suspected.

DR. ALEXANDER: A few hours before death she had paralysis on the right side of her face.

DR. RIOCH: No, her face was drawn to the right side, which means paralysis of the left side. But, first, let us straighten out the question of block. There is no block because a block above the foramen of Monro would not produce the picture of differing cerebrospinal pressure on the right and left sides upon jugular compression. If she had had a right lateral sinus thrombosis, this would account for the paralysis of the left side of the face and the Babinski sign found on the left, but not for a Babinski sign on the right. But compression of one jugular vein at a time is of little value. Both jugular veins should be compressed simultaneously and the pressure elevated. Then

one should be released to observe the fall on that side. Then both should again be compressed, and then the other released. Abdominal compression should be done, even before jugular compression, to make sure that the system is free. The only question, then, is did she have a right lateral sinus thrombosis? The question has to be left open, however, because she might have had abscesses or a vascular accident terminally.

DR. ALEXANDER: How common is sinus thrombosis meningococcal meningitis?

DR. RIOCH: It is rare.

DR. WOOD: Very rare.

DR. ALEXANDER: Do you feel, Dr. Harford, Dr. Rioch and Dr. Wood, that insofar as her infection was concerned, barring other complications, it had no immediate relevance? To put it simply, do you believe her infection was cured?

DR. HARFORD: I do not believe so. I think there is some evidence that the infection in the meninges was favorably influenced but, because of the fact that she had all these petechiae on the skin, she might have had hemorrhages into the adrenal glands—the so-called Waterhouse-Friderichsen syndrome.

DR. ALEXANDER: Hemorrhage into the adrenals in meningococcus infection is not uncommon, but the Waterhouse-Friderichsen syndrome is extremely rare.

DR. WOOD: Still rarer in adults.

DR. HARFORD: She had a great many petechial spots. With so many on the skin I would expect some in the internal organs, and when they occur in the internal organs they are apt to occur in the adrenals. Her blood pressure on her previous admission was 140/80 while this time it was 95/75.

DR. HAGEMAN: I do not think there is proof that the meningococcemia was cured. There was only one negative culture. There is a good possibility that a positive culture might have been obtained on chick embryos. There are numerous instances of this.

DR. REINHARD: There were two negative spinal fluid cultures not mentioned in the case record.

DR. HAGEMAN: We have found this year that four days after cultures were negative, when done in a routine manner, they contained viable organisms on chick embryos. These had not all been phagocytized.

DR. ALEXANDER: Do you feel that this infection was overcome, Dr. Wood?

DR. WOOD: I agree with Dr. Harford and Dr. Hageman. I think it quite possible that meningococci were still present in the visceral lesions and meninges at the time of death.

DR. ALEXANDER: Treatment such as she received is usually successful. Must we infer that she did not receive enough treatment? Do these antibodies and the drug penetrate the meninges if one does have an internal hydrocephalus?

DR. WOOD: I think that there is a complicating factor in this case which changes the situation. This patient was not a normal individual; her general

resistance to the infection was doubtless influenced by her other serious complicating disease.

DR. RIOCH: There is also a question of the time at which the therapy was instituted. It was forty-eight hours before this patient was brought to the hospital. It is possible that earlier administration of the drug might have made a difference. A number of patients I know of who have died of this disease were thirty-six hours or so without therapy.

DR. ALEXANDER: The complicating feature of this is the fact that she had albuminuria, 4 plus, and red blood cells and casts in the urine. She had a non-protein nitrogen of 60 mg. on admission which soon rose to 120 mg. Dr. Bulger, do you think that would be relevant?

DR. HAROLD BULGER: I do not think so, but the fact that she had some years before had a great many white cells in her urine might be relevant. She might have had a chronic pyelonephritis with a flare-up at this time following meningococcal disease. The fact that she had only a few white cells at this time does not suggest a very marked flare-up.

DR. ALEXANDER: How would you interpret the renal lesions in this patient?

DR. BULGER: They could be caused by an old pyelonephritis with kidney destruction, but without a recent flare-up. It does not look like a recent flare-up but rather like an acute nephritis with an acute exacerbation of a chronic state. It does not seem to me that this could be the important cause of death, but a secondary cause.

DR. ALEXANDER: There are many complications to meningococcal infection; pericardium, lungs, endocardium, eyes, joints may be involved. But is there such a thing as meningococcal nephritis?

DR. WOOD: I do not think so.

DR. ALEXANDER: We must assume that this renal manifestation was the result of some other factor.

DR. BULGER: She must have had a chronic pyelonephritis or a chronic glomerular nephritis.

DR. ALEXANDER: What do you think the kidneys will show?

DR. BULGER: I think they will more than likely show evidence of an acute process—some minute hemorrhages in the kidneys and perhaps quite a bit of change in the tubular cells.

DR. ALEXANDER: Would you expect a nonprotein nitrogen reaching 120 in five or six days?

DR. BULGER: Yes.

DR. ALBERT TAUSSIG: I think it is quite obvious that she had either acute nephritis or an acute exacerbation with a sharp rise in the nonprotein nitrogen. The etiology remains obscure. It seems natural to expect any septicemia as a possible cause of acute kidney damage.

DR. ALEXANDER: I believe it is rare in meningitis. Is there any good evidence that this woman had uremia and that that had something to do with her coma?

DR. CYRIL M. MACBRYDE: She had some fall in

carbon dioxide combining power, some degree of acidosis which might go with acute kidney failure, a rise in nonprotein nitrogen. I think she had some form of acute kidney damage which had something to do with precipitating her death. One factor we have not mentioned is that she was given sulfa drugs, which might have added to previous kidney damage.

DR. HAGEMAN: None of the sulfonamides are excreted as rapidly in the presence of this amount of kidney damage. She received sulfamerazine however, only on three occasions in four days—much less than would ordinarily be given. More than likely she accumulated a good deal of acetyl sulfamerazine in her blood stream, not indicated in the case record. I do not believe the chemotherapy added to her kidney damage at all.

DR. ALEXANDER: What about low blood pressure and high nonprotein nitrogen?

DR. BULGER: That would fit in.

DR. ALEXANDER: Dr. Wood, what about her low blood pressure and the possibility of adrenal hemorrhage?

DR. WOOD: The chlorides were 645 mg. per cent. This finding is against the diagnosis of Waterhouse-Friederichsen syndrome, because these patients have been followed during crisis and have been found to exhibit low blood chlorides and the other signs of adrenal insufficiency. I do think that the blood pressure in this case is very important. Were other pressure readings made?

DR. REINHARD: The blood pressure was taken regularly and ranged between 70 and 100 systolic and 55 and 75 diastolic.

DR. WOOD: There was no hypertension then at the time that the patient was developing uremia. In spite of this, I believe that she had renal disease before she became ill with meningitis, and I will be surprised if the autopsy did not reveal evidence of chronic pyelonephritis.

DR. RALPH C. POLLOCK: I think it is possible that she had a glomerulonephritis. The blood pressure is against that, but it might happen.

DR. EDWARD MASSIE: Perhaps this patient had hydronephrosis. Her blood pressure had been normal for twelve years. One should always think of hydronephrosis in such cases.

DR. ALEXANDER: This patient had meningitis not cured by treatment, and one would expect a culture of organisms still present. One would expect that secondarily her kidneys will certainly show striking lesions, probably an old pyelonephritis, possibly a very acute nephritis (to have arrived at these values in a few days), or possibly a hydronephrosis. It would not be surprising to find hemorrhage in the adrenal glands. Are there any other suggestions?

DR. JOHN SMITH: I think there is one other possibility, perhaps rather remote. There might be an acute bacterial endocarditis so that toxins and bacteria were fed into the system and protected from the drug.

DR. ALEXANDER: It must always be mentioned. One might have expected a positive blood culture taken before treatment if it were endocarditis.

DR. CARL MOORE: What does Dr. MacBryde think about the advisability of treating a patient with uremic acidosis with sodium lactate?

DR. MACBRYDE: I think there is some logic in trying it. Certainly patients with uremia and acidosis frequently respond favorably.

DR. WOOD: I would not give alkali to a patient going into uremia on the grounds that the acidosis is helpful as a diuretic. Nothing is to be gained from alkali therapy unless the acidosis is profound.

DR. MACBRYDE: That is true. If the carbon dioxide combining power had been a good deal lower, there would have been more indication for sodium lactate.

DR. ALEXANDER: It is difficult for me to conceive that this patient was well five days before her death and in five days developed such extreme damage as to have a primary acute nephritis with a non-protein nitrogen of 120. She might have had it for a longer time. From the history I would be much more inclined to think that this is an old lesion. On her first admission in 1930 she had pus cells and albumin and casts in the urine, and on her third admission she had white cells in her urine. On that basis, I would expect pyelonephritis.

CLINICAL DIAGNOSIS

Meningococcic meningitis.

DR. ALEXANDER'S DIAGNOSIS

Meningococcic meningitis.

Chronic pyelonephritis.

ANATOMIC DIAGNOSIS

Acute purulent leptomeningitis—*Neisseria intracellularis*.

Bronchopneumonia of the upper and lower lobes of the right lung and of the lower lobe of the left lung—*Staphylococcus aureus hemolyticus* and *Neisseria intracellularis*.

Acute fibrinous pericarditis (no pathogens recovered on culture).

Acute nephrosis (history of administration of sulfamerizine).

PATHOLOGIC DISCUSSION

DR. MARGARET SMITH: A purulent meningitis was present over the cerebral hemispheres and especially over the base of the brain. The right lateral ventricle was lined with a thick purulent exudate which covered the choroid plexus. There was an extensive bronchopneumonia. *Staphylococcus aureus hemolyticus* was present in great numbers in the cultures made from the lung. Two or three colonies of *Neisseria intracellularis* were also present. Therefore it can be assumed that a meningococcemia had been present although the blood culture was negative at autopsy. No pathogens were recovered from the pericardium. Granted that this

was a sterile inflammation it may be explained by the uremia.

In the kidneys there were focal scars of chronic pyelonephritis but no acute pyelonephritis was present. There was slight thickening of the arterioles of the kidney and thickening of the capillary membranes of the glomeruli. No acute glomerular lesions were found. On the other hand, there were degenerative changes in the epithelium of the renal tubules. Many of the tubular cells were vacuolated, the nuclei of others were lost. There was also regeneration of the tubular epithelium as indicated by the numerous multinucleated cells, an occasional one having as many as eight nuclei. Two possible causes for the tubular damage are suggested by the patient's history. Sulfamerizine was given and we know that the sulfonamides may damage the renal epithelium. There was also a severe meningococcal infection. However, the clinical evidence of renal damage was present when the patient entered the hospital and before sulfamerizine was given. That damage to the renal tubular epithelium in meningococcal infections may occur became apparent from a study of the kidneys of a number of other cases of meningococcal meningitis in our files.

SPECIAL ARTICLE

FARM SECURITY ADMINISTRATION

CONTRACTS WITH COUNTY MEDICAL
SOCIETY PARTICIPATION

CARL F. VOHS, M.D.

ST. LOUIS

It has been my privilege to assist from the very beginning ten years ago in the development of the Farm Security Administration program in general, and in its medical services particularly, throughout the Middle West and especially in the State of Missouri. The program of the Farm Security Administration is so little understood by the general public, and condemned by some, that I wish for just a few moments to discuss it.

The United States had 6,097,000 farms according to the 1940 census. At the top are 1,954,000 farms now operating close to full capacity. These are the big farms. Since Pearl Harbor they have increased their food output in the face of great obstacles; they have reached a level of production beyond which it will be difficult for them to go.

Much of the additional food needed, therefore, will have to come from the other two thirds of the farmers. About half of these can do little more than they have in the past. They lack the resources, or they are too old, or they are farming only part time. But one and a half million or more can increase their production greatly. Most of them, however, will need help to do it. What they can accomplish

Presented at the meeting of the Medical Service Plans Council of America, Chicago, June 6, 1943.

if given the necessary help was demonstrated by the 464,000 farm families that the Farm Security Administration assisted last year.

While farmers as a whole were increasing their milk production 3 per cent in 1942, Farm Security Administration families increased theirs 20 per cent. While all farmers were increasing egg production 15 per cent, Farm Security Administration farmers increased egg production 31 per cent. Other statistics might be quoted for other commodities.

This has been accomplished by a combination of credit and supervision. Supervision is sound, practical help in better farming methods. As practiced in Farm Security, it is based on a written farm plan and on-the-farm assistance. In an all-out food program it has a number of virtues. For one thing, shifts from nonessential or little needed crops to more essential commodities call for knowledge that many farmers do not have.

New hands at livestock raising, for example, need suggestions as to efficient care and feeding. Farmers undertaking extended production of oil-bearing and food crops for commercial use for the first time can expand more rapidly and with less loss if they have technical help in planning, producing and marketing.

It was no accident that Farm Security Administration borrowers in Arkansas produced 73 per cent of the state's peanuts last year. When it became apparent that peanuts for oil were needed from the South as well as the old peanut areas, Farm Security Administration supervisors and Farm Security Administration farmers were able to plan, together, what had to be done to get increased acreage.

This kind of supervision is necessary to channel the efforts of many thousands of farmers into the efficient production of crops that are most needed. The outstanding repayment record of Farm Security Administration borrowers shows that it also is one of the most efficient ways of guaranteeing collection of production loans.

Although these borrowers could not get credit from any other source, they had repaid 85.5 per cent of the matured amount of their loans up to December 31, 1942. Including payments on loan installments that were not yet due, repayments came to 91 per cent of maturities.

By December 31, loans to nearly a million farm families totaled \$712,655,272. Of this sum, \$371,343,926 had matured and, including the \$20,603,263 applied to unmatured principal, \$337,929,603 had been repaid. In addition, the government had collected \$44,603,263 in interest on these loans.

A farmer's production also is affected directly by his health and the health of his family. Realizing this, the Farm Security Administration appealed to the American Medical Association, state and county societies for help. The House of Delegates of the American Medical Association adopted general principles under which plans might be set up. State and county medical societies then set up plans to meet local needs in each county. This probably accounts for the many types of plans set up in the

various states. The plans offer one or more of the following services: general physician's, surgeon's, dentist's, hospitalization and supply of some drugs. Of 111,468 families enrolled in medical care programs at the end of the fiscal years 1942, 98.5 per cent were entitled to physician's care, 64 per cent to surgeon's care, 58.2 per cent to hospitalization, 42.3 per cent to drugs and 14 per cent to dental care. In addition, 33,045 families were covered by separate dental programs. In the beginning, definite rates were established for each of these services and paid into the hands of an elected trustee and physicians were paid their regular charges on a case basis. It was soon seen by the physicians that certain families went way over their budget and others had not touched theirs. The annual prepayment plan soon became universal. The rates actually charged have been determined locally according to the type of program, the scope of the service covered and the financial ability of the borrowers. At the end of August 1942, the Farm Security Administration medical care program had 1,056 units in 1,122 counties with 118,986 different families and 625,548 persons holding membership. For the purposes of analysis and study, these counties and their states have been divided into twelve regions nationally. In these twelve regions in the month of August 1942 the number of calls per 1,000 persons ranged from 99 to a high of 165. The total amount of approved physicians' charges was \$134,000 and the all over percentage paid on these charges was 69.2 per cent. With this general experience and all statistics at hand, the Department of Agriculture is now planning postwar programs in health, sanitation, nutrition, housing and engineering projects. For this purpose it has divided the states into nine regions. The midwest region consists of Missouri, Illinois, Indiana, Ohio, Michigan, Iowa, Wisconsin and Minnesota.

Plans and experiments are now underway and I would like to go into greater detail for I believe they will form the blue print of what is to come. Plans initiated by the Interbureau Coordinating Committee on Postwar Programs of the Department of Agriculture have resulted in the development of six county-wide health programs for farm families in five different states during the latter half of 1942. They are as follows: (1) Cass County Rural Health Service in Texas; (2) Hamilton County Medical Aid Association in Nebraska; (3) Nevada County Rural Health Service Association, Inc., in Arkansas; (4) Newton County Rural Health Service Association, Inc., in Mississippi; (5) Wheeler County Rural Health Service in Texas; (6) Walton County Agricultural Health Association in Georgia.

Membership in these associations is open to all families and persons who secure most of their livelihood from agricultural pursuits. Each member is required to pay a fee equal to 6 per cent of his net cash income during 1941. The minimum fee which may be paid by any member is \$6.00. This fee is then supplemented from Department of Agriculture funds in sufficient amount to bring the

total up to the amount per member needed to cover costs of service. This amount has been set at \$50.00 for the Cass County association, \$54.00 for the Nevada, Newton and Wheeler County associations and \$57.00 for the Hamilton County association. As of December 30, 1942, the membership in all county associations was 7,923 families and 34,854 persons. The average net income in 1941 for Nevada County, Arkansas, was \$114.89, and for Hamilton County, Nebraska, it was \$404.45. In Walton County, Georgia, the net cash income was \$197.06. At these figures it is evident that the program must be subsidized to quite an extent.

The services offered by all associations are physicians' care, surgeons' and specialists' care for acute conditions, hospitalization, prescribed drugs and limited dental service. Community nursing service also is included in the program of three associations. Specific limitations on the services vary for different associations but the tendency is to provide medical care for all except definitely chronic conditions such as tuberculosis. Hospitalization is limited in most associations to fourteen days per case. The trend with reference to dental care is to provide prophylaxis and extractions necessary for removal of threat to health for all members and, in addition, amalgam and synthetic porcelain fillings for children. The distribution of membership fees to cover the cost of these various types of service in the different associations follows.

Table 1. *Membership Fees*

Service	Cass	Hamilton	Nevada	Newton	Wheeler
Physicians'	\$16.00	\$22.00	\$16.00	\$16.00	\$18.00
Surgeons', Specialists'	6.00	6.00	6.00	6.00	6.00
Hospital	10.00	10.00	10.00	10.00	12.00
Drug	7.00	5.00	7.00	7.00	6.00
Nursing	3.00		2.50	2.50	
Dental	7.00	7.00	7.00	7.00	6.00
Contingent	1.00	3.00	2.50	2.50	3.00
Administration	2.00	4.00	3.00	3.00	3.00
Total	\$50.00	\$57.00	\$54.00	\$54.00	\$54.00

The funds allocated in this manner to the different types of services (except contingent and administration funds) are divided into twelve equal portions and one portion is made available for use each month through the year. For all services, except physicians' and drug services in Wheeler County, these monthly allotments are then used for the payment of bills submitted for professional services rendered during the month. If the fund is adequate to cover the bills in full, they are paid in full and surpluses are carried to the end of the year. If the total of bills exceeds the total of funds, the percentage relationship of the fund to the total of bills is determined and that percentage is paid on all bills. The contingent funds also are used in various ways to supplement the funds allotted for the different services. Unpaid balances are carried to the end of the year when surpluses are used to make further payment on them.

This arrangement applies for all services except physicians' and drug services in Wheeler County. In this association physicians have accepted respon-

sibility for provision of drugs as well as physicians' service and the fund for these two services have been pooled and are distributed at the end of each month on the basis of the number for whose care each physician was responsible during the month. The roster of members used for this purpose is secured by each member indicating his choice of physician as he is received into membership. Change of physician may be made at the end of any month by arrangement with the manager of the association.

The volume of medical and dental care was as follows: Illnesses receiving physicians' care per 1,000 persons were 1,785.5. This is about three times the prevailing rate of 526 cases per 1,000 persons for the general population, urban and rural. Physicians' calls per 1,000 persons were 3,369.3; surgical cases per 1,000 persons were 99.4; hospital admissions per 1,000 persons were 155.3. These three rates are about 50 per cent higher than the prevailing rates for the general population and 75 per cent above what rural families have been receiving. Dental cases per 1,000 persons were 484.1. This is almost twice the prevailing rate of 269 cases per 1,000 persons per year for the general population.

It must be noted that this volume was attained in the early months of operation and probably will approach the normal as the programs continue. One conclusion can be drawn from this experience and that is that medical, surgical, dental and hospital care among these people is needed sadly.

The percentages paid on physicians' charges during the entire period vary from 33 per cent for Cass County to 67.7 per cent for the Nevada County. The variation between these limits was found to follow rather closely the variation in the average charge which has been made for office calls. This charge ranged from \$1.50 in Nevada County to \$3.00 in Cass County. The percentages paid for surgical and specialists' services range from 37.8 to 98.2 per cent; for dental services from 63.3 to 98.1 per cent for bills rendered.

The great volume of work waiting to be done in the fields of surgery and dental care makes it impossible to provide sufficient funds or professional personnel to meet the need fully. The best that can be provided is a limited service and it is natural that there should be difficulty in holding the service to the limits set, although improvement in this respect is likely as the program progresses. Evidence of this with respect to the surgical program may be seen in the reports of the Wheeler County association which had completed four months of operation at the end of October. Its payments on charges for surgery for the four months average 70.3 per cent, while its payments for October were 89.6 per cent of charges.

Payments on hospital charges ranged from 69.3 to 100 per cent in all six counties. As experience in these various types of plans accumulates, it is evident that there is a definite leveling off in the services rendered and in the charges and cost of these services. It therefore may be concluded that

soon an actuarial soundness may be approached to satisfy all and enable the establishment of medical service plans on state-wide bases. Probably the best way to accomplish state-wide plans will be to establish economic units or trade areas with a population of at least 30,000 people. This area will consist of as many counties as necessary with accessible good roads a factor. In Southeast Missouri where a project was started on January 1 of this year, there are seven counties. Each economic area will be expected, through a prepayment plan, to support a health unit consisting of hospitals, physicians and nurses. Wherever needed, hospitals and clinics will be built, nurses will be supplied by the cooperation of the State Board of Health. Local physicians will serve the population under the supervision of committees appointed by the county and state medical associations. The actual cost of this program is to be met by the community insofar as is possible. The differential between what the community can pay and the figure at which the program becomes actuarially sound must be made up by county, state and Federal funds. It is believed that this program will deliver the highest type of scientific medical and dental care into the homes, offices and hospitals of these communities at a price that they can pay and, if not, by augmenting it with the smallest amount of tax money possible. All boards of control are to be in the hands of public minded citizens just as Group Hospital Service boards are organized locally and on a state-wide basis.

In summary, I would like to emphasize these points:

1. It is evident that neither the American people nor Congress will support a national compulsory health program at this time.

2. A cash indemnity program for medical and hospital care is not sound and Congress will not support it.

3. There is evidence, especially in rural areas, that medical, dental and hospital care is not adequate and this problem must be solved by physicians who are interested in medical service plans, the medical profession as a whole, and the government if subsidies are necessary.

4. Postwar planning should be based upon local needs and paid for insofar as it is possible by local funds, private, charity or tax provided, under local and state-wide lay and professional supervision.

5. It is imperative that every county and state medical society appoint a postwar planning committee to cooperate with all such committees otherwise appointed from the general public. It is our duty to the men now in the services to see that favorable conditions be maintained and developed for them to practice in when they return. If this is not done, they will remain in the services of the government and, in many places, replace the practice of medicine as it is known today. Physicians must do much thinking; must do positive planning; must gain the confidence of capital, labor and the

general public so that they will help develop these plans on a community basis.

Let us bear in mind what the famous economist, Henry George, wrote: "There is danger in reckless change; but greater danger in blind conservatism."

508 N. Grand Boulevard.

ABSTRACTS AND DIGESTS

LAMINECTOMY

Early Laminectomy for Spinal Cord Injury Not Due to Subluxation. Foster Kennedy, et al. *Am. J. Surg.* 60:13 (April) 1943.

In an excellent article the author reviews the problem of spinal cord injury, calling attention to the fact that for the last century neurologists and neurosurgeons have debated the indication for laminectomy in spinal cord injuries, and opinion is still divided. Perhaps the war experience will clarify this controversy. They review the subject, quoting the discussions a century ago between Sir Charles Bell and Sir Astley Cooper about the matter, and the remarkable work of Alfred R. Allen, in 1908, in which this author produced spinal cord injuries in dogs by means of an instrument, whereby given weight could be dropped from a known height to produce a given impact. The author described in detail the technic of the experiments. After Allen and Alfred Taylor in New York and Frazier in Philadelphia studied the subject and brought the experience of clinical cases, they strongly advocated the surgical intervention of these cases of cord injury. Frazier, in 1918, had called attention to the fact that "improvement in neurological technic had been so great that one could reasonably expect a striking reduction in mortality rate." In such a case, prior to 1911, the operative mortality associated with laminectomy was 20 per cent, whereas, from 1911 to 1915, it was less than 7 per cent. Today, all the neurosurgeons agree that the hazard has been lessened even more greatly.

The author reviewed the contrary opinion about early surgical approach in laminectomy for spinal cord injury, quoting Jefferson and Riccoch's opinions presented at a symposium of the Royal Society of Medicine in 1927 in which these authors took a pessimistic view as to the value of early laminectomy. Kennedy and his coworkers disagree with this pessimism. With abundance of arguments and observations they review the subject magistrally, concluding that indications for laminectomy in spinal cord injuries need more frequent operative intervention, because: (1) It is impossible to determine clinically whether an apparently complete transverse lesion of the cord is not really a temporary physiologic interruption of function. (2) Negative roentgenograms cannot for certain exclude a bony lesion of the spine. (3) Prolonged cord compressions, or manifested

by manometric block, can destroy cord function, and may be relieved by early surgery. (4) The operation of laminectomy is associated with little risk. The authors call attention to the fact that there is no valid series of statistics of cases in which patients are treated alternately by laminectomy or conservative regime, advocating such a study: also that laminectomy should be performed early, because it is a surgical emergency.

In the *Archives of Neurology and Psychiatry*, May 1943, in the society transactions of the New York Neurological Society, the neurosurgeons, Joseph King and Byron Stookey, discussed the Kennedy, et al, papers. King concluded that "the surgeons are willing to operate in certain cases early or immediately, provided the neurologist can show definite reasons for doing so. I feel that in some cases immediate operation should be performed, that in many cases no operation is required and that in others, even if operation is carried out, little improvement will result." Byron Stookey says, "The question is whether the operation can improve the patient's condition," and summarizes that "gunshot wounds, at least in the early stage, should be explored after study unless there is some contraindication, and that the wounds resulting from direct blows with fractures of the posterior arches should likewise be explored, but I question seriously the value of attempting to remove pressure from the cord by operation which is all the surgeon can do, when the real deformity is in the body of the vertebra. I believe the operation only weakens the vertebral column."

The Kennedy, et al, article is excellently presented, well written and deserves great consideration, particularly in war surgery. It is earnestly advised that physicians read the article.

R. M. KLEMMER, M.D.

FOODS THAT DISAGREE WITH HEALTHY PEOPLE

Foods That Disagree With Healthy People. III. The Influence of Method of Preparation on the Disturbing Effects of Onions. Osee Hughes, M. S., and Harriet Harris, M. S. *J. Am. Dietet. A.* 18:815 (December) 1942.

Twenty-four healthy college students (ten men, fourteen women), ranging in age from 20 to 45 years, who said the eating of onions induced abdominal discomforts, were fed one half cup (90 gms.) Texas Silver-skin Bermuda onions in the forms indicated hereinafter, accompanied by potatoes, bread, butter, fruit and a beverage at luncheon. The onions were fed (1) raw, sliced, (2) raw, sliced and soaked in vinegar for one and one half hours (2½ per cent acid), (3) cooked one and one half hours in a closed kettle, (4) cooked one and one half hours in an open kettle, (5) cooked until tender, thirty minutes, in an open kettle. On the

day following the eating of the onions, the subjects reported their experiences by questionnaire.

The reactions of both sexes were much the same except that the women complained of abdominal, epigastric pain with regurgitation, whereas the men reported reactions no more disturbing than gas, belching, "indigestion" and prolonged aftertaste. The length of time prior to the onset of symptoms varied from immediately to four or five hours after ingestion. The duration varied from a few minutes to four or five hours. In some, the aftertaste continued until the following morning. Gas, belching, aftertaste, regurgitation, "indigestion," abdominal pain, epigastric pain, nausea, abdominal distention, headache and diarrhea were the disturbances induced, in that order of frequency.

The fewest digestive upsets followed cooked onions for the shortest possible time in an open kettle, and the greatest number followed when they were eaten raw. In these twenty-four subjects who had said they were disturbed by eating onions, two had no symptoms and 91 per cent experienced reactions of discomfort following the ingestion of onions prepared according to the five methods, with some experiencing as many as four types of disturbances. Of the cooked onions, those cooked for one and one half hours in a closed kettle were the most disturbing, while those cooked in an open kettle until tender, thirty minutes, affected only about one fifth of the subjects.

In a previous communication (*J. Am. Dietet. A.* 15:24, 1939), these authors reported the results of similar observations with cabbage and cauliflower. These showed that gastrointestinal disturbances were more frequent when the vegetables were cooked for one and one half hours and least frequent when cooked only until tender (starting them in boiling water, using an uncovered kettle and cooking for the shortest possible time to produce tenderness, about thirty minutes.)

The vegetables which are included in the cabbage and onion families contain sulfur. The gastrointestinal disturbances are due to the decomposition of these sulfur compounds induced by long cooking and by the retention of volatile vegetable acids which favor such decomposition when cooked in covered kettles.

Comment: It is a common experience to have patients relate that certain foods produce digestive disturbances only when prepared in certain ways or when eaten in certain combinations. These controlled observations offer an explanation for these vagaries in that different methods of preparation may produce chemical decomposition products capable of inducing digestive disturbances or render them innocuous if already present.

Undoubtedly further observations on the influence of cooking upon the chemical components of food will explain some of the deceptive capers of gastrointestinal symptoms in the absence of demonstrable organic lesions.

C. H. EYERMANN, M.D.

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AUGUST, 1943

EDITORIALS

GROUP HOSPITAL SERVICE FOR ASSOCIATION MEMBERS

Plans are being completed to offer Group Hospital Service benefits to members of the Association through the office of the Association in accordance with an action taken by the Council on May 30. Membership will be available to all Association members, their families and their office assistants.

Many physicians have availed themselves of this low-cost protection through groups formed by their county medical society. These arrangements will not be disturbed. The Association group to be formed within the next few months is designed to offer this service to physicians who have not had an opportunity to secure Blue Cross membership.

Group Hospital Service benefits cover the following hospital services: thirty days' care each membership year; two-bed room (not a ward); private room at extra charge, if available; meals, special diets, general nursing; maternity care (ten months membership required); routine laboratory work; all drugs, medicines and biologicals; all glucose and sera except blood and blood plasma; all dressings and casts (no patented braces); operating room (no limit); ambulance service (restricted to highway accidents and hospital transfers, fifty miles); emergency outpatient care. Special benefits include one third off semiprivate room rate for subscribers and sponsored members for an additional six months; fourteen days diagnostic care for tuberculosis, mental, social, drug and alcoholic diseases in a general hospital or up to \$90.00 in any member year in private or governmental sanatoria; special arrangements for care of communicable or contagious diseases in isolation hospitals.

There is no physical examination or age limit. Members merely sign a statement saying that they know of no condition requiring hospital care.

Members may include all unmarried dependent children under 18 years in the family contract and unmarried children over 18 may be enrolled as sponsored members. Hospital benefits are identical for all members of the family but dependents

pay the hospital \$1.00 a day or \$2.00 a day in maternity cases.

The cost of this all-inclusive service is extremely low:

Subscriber	75 cents monthly
First dependent	50 cents monthly
All other dependents	25 cents monthly
Family	\$1.50 monthly
Sponsored members (each) ..	75 cents monthly
The subscriber only pays a \$1.00 enrollment fee.	

More information will appear in the September issue of THE JOURNAL. Any inquiries may be directed to the Missouri State Medical Association, 623 Missouri Building, St. Louis.

A TICKET TO POLITICAL MEDICINE

A cursory reading of Senate Bill 1161, introduced by Senator Wagner of New York on June 3, 1943, might seem to offer a painless panacea for most misfortunes; but further scrutiny of this so-called "general welfare" bill uncovers a number of implications of tremendous magnitude.

It proposes to establish among other supposedly social benefits a Federal system of medical and hospitalization benefits. In this respect the bill would place in the hands of the Surgeon General of the Public Health Service, after consultation with the Social Security Board, and with the approval of the Federal Security Administrator, the power to make and publish all rules and regulations relative to the administration of the Federal medical and hospitalization benefits. This authority granted the Surgeon General appears to include: the determination of qualifications for designating specialists, the establishment of fee schedules for all medical services, the setting up of standards to apply to participating hospitals and clinics, the determination of the number of potential patients for whom a physician may provide medical care, decisions as to methods and arrangements of paying for medical and hospital services, the hiring of doctors on salary basis established by the Surgeon General and the establishment of professional standards of quality to apply to general and special medical benefits.

A national advisory medical and hospital council would be appointed by the Surgeon General of which he would act as chairman. This council would be authorized to function only in an advisory capacity to the Surgeon General with reference to carrying out the provisions of the act. Such authority and power as vested in the Surgeon General, whoever he may be, would seem to designate such individual as czar over American medicine. Under this bill he would more or less dictate the type, extent and conditions of medical service and hospitalization available to more than 100,000,000 people.

It has been estimated that approximately \$3,000,000,000 would be expended annually in this program under the direction of the Surgeon General.

To secure the funds for administering the total social security program as outlined in Senate Bill 1161, including medical and hospitalization benefits, the bill provides that: every employer shall pay a 6 per cent tax on the wages paid to individuals up to \$3,000 a year; every employee shall pay a 6 per cent tax, deducted from wages on earned income, up to \$3,000 per year; every self-employed individual shall pay a tax on the market value of his services up to \$3,000 per year, and under certain circumstances, Federal, state and municipal employees shall pay a 3½ per cent tax on their annual salaries. The bill further provides for an extension of social security coverage to various employed groups now excluded.

With the inclusion of more than 100,000,000 people in the United States under such a program, it becomes apparent that the private practice of medicine as now constituted would fade into history. Postgraduate courses in politics conceivably could be considered a necessary part of medical education under such a system. A physician's politics under this type of state medicine would stand to profit him more than his professional qualifications. It is easily discernible how public health stands to suffer through a regime as would be instituted under Senate Bill 1161.

In any type of social legislation certain fundamentals and principles of a democratic society must ever be followed. Certain of these principles were well expressed by the Rev. Alphonse M. Schwitalla, S. J., in his presidential address at the Wartime Conference of the Catholic Hospital Association of the United States and Canada which was published in the June issue of *Hospital Progress*: "Whatever the future may have in store for us, let us hope that the principle of responsibility of the individual for his own acts will be safeguarded; that the principle of the cooperation between public and private agencies will be maintained; that no coercive system of enforced social insurance will be imposed upon the American people; that the betterment of human society will be effected through a sound regard for the elevation of the individual through his moral responsibility rather than that a semblance of betterment be attained through palliative patronage which may seem to facilitate the solution of society's problems by a facile shifting of the social and governmental problem of the tax program. Whether or not Senate Bill 1161 conforms with these specifications is a matter which future study alone can adequately reveal. It must be admitted, however, that a cursory reading of the bill does not seem to favor the preservation of such basic principles."

NEWS NOTES

Dr. J. M. Jenkins, St. Charles, has been appointed city physician for St. Charles for a term of one year. He succeeds the late Dr. A. A. Gossow.

The extension of hospital benefits by Group Hospital Service, announced in the July issue of *THE JOURNAL*, referred to Group Hospital Service, Inc., St. Louis.

Drs. H. L. Mantz, Kansas City, and J. A. Stocker, Mt. Vernon, attended a meeting of the executive committee of the Missouri Tuberculosis Association in Kansas City on June 3.

Dr. W. H. Williamson, Mokane, attended a reunion of the class of 1893 of the former Kentucky Medical School, Louisville. Four other members of the class were present at the meeting which was held at the Henry Clay Hotel in Louisville.

The Newton County Health Unit has moved into new quarters in Neosho in a building constructed by the Federal government. Dr. Donald Campbell, head of the health unit, the county engineer and health nurses have offices in the building. There are also an auditorium, two clinic rooms, a roentgen ray room, a library and a drug room.

Sixty-six crippled children attended a clinic for crippled children held at the Missouri Methodist Hospital in St. Joseph on June 22. The children were from Buchanan and ten adjoining counties. The clinic was sponsored by the Buchanan County Society for Crippled Children. Dr. Frank D. Dickson, Kansas City, headed the staff which conducted the clinic.

The National Society for the Prevention of Blindness has announced a prize of \$250 to be awarded for the most original paper adding to the present knowledge about the medical treatment of noncongestive glaucoma. Papers should be in the office of the Society, 1790 Broadway, New York City, by September 1944.

DEATHS

Redmond, Thomas J., M.D., St. Joseph, a graduate of Rush Medical College, 1906; honor member of the Buchanan County Medical Society; Affiliate Fellow of the American Medical Association; aged 69; died May 22.

Grim, Ezra C., M.D., Kirksville, a graduate of Washington University School of Medicine, 1901, honor member of the Adair-Schuyler-Knox-Sullivan-Putnam County Medical Society; Affiliate Fellow of the American Medical Association; aged 69; died May 26.

Higdon, Edward Everett, M.D., Fredericktown, a graduate of Barnes Medical College, 1903; member and past president of the St. Francois-Iron-Madison-Washington-Reynolds County Medical Society; aged 73; died May 28.

Coryell, John Barstow, M.D., St. Louis, a graduate of Washington University School of Medicine, 1885; member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 74; died May 31.

Newlon, Charles S., M.D., Kansas City, a graduate of the College of Physicians and Surgeons, Keokuk,

Iowa, 1881; member of the Jackson County Medical Society; Affiliate Fellow of the American Medical Association; aged 86; died June 4.

Sayers, John Smith, M.D., Springfield, a graduate of Barnes Medical College, 1897; member and past president of the Greene County Medical Society; aged 71; died June 15.

Kendall, Guy M., M.D., Chilhowee, a graduate of the Kansas Medical College, Topeka, 1908; member of the Lafayette County Medical Society; aged 65; died June 17.

Gibbs, Fred Le Grande, M.D., St. Louis, a graduate of Washington University School of Medicine, 1913; member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 52; died June 23.

INCIDENTALLY

FROM THE EXECUTIVE SECRETARY

Under the Wagner bill for broadening the American Social Security program, the Surgeon General of the Public Health Service will be authorized to take all necessary and practical steps to arrange for the availability of the medical, hospitalization and related benefits.—On the basis of such a proposal it appears that the individual physician would have little part in determining ways and means of distributing medical care in the future.

Certain ramifications of the Wagner Bill are not too apparent.—It is doubtful if a democratic society can exist where there is no reward for enterprise and no privileges for frugality.

H. R. 2935 contains a proviso to compel the Children's Bureau to permit participation in its obstetric programs by any practitioner authorized by state law to practice obstetrics.—This bill has passed the House and Senate and now awaits the President's signature.—Records do not show that a determination has ever been made in Missouri as to what practitioners may engage in the practice of obstetrics.

There are different opinions as to whether hospitals are engaging in the practice of medicine, where in numerous group hospitalization plans certain medical services on a service basis as a part of hospital care are offered, and in plans adopted by numerous hospitals which include certain medical services in an "all inclusive" per diem rate for hospital care.—In some states the development of prepaid medical service plans by county medical societies and the cooperation established between these medical society plans and those of hospital service plans offer an opportunity to eliminate this controversy.

Further information states that Surgical Care, Inc., of Kansas City, began enrollment on June 1, 1943, and enrolled some 1,500 participants up to the middle of July.—There are now approximately 280 participating physicians in Greater Kansas

City and cooperation seems to be excellent.—A number of cases have been paid and the reception accorded the new program by management and labor is very promising.

THE JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION is owned jointly by each member of the Association. Your representatives have solicited, directly or indirectly, the advertising which appears in every issue.—Is it not only fair that these advertisers be patronized whenever feasible?

During this state legislative session no bills have become law which appear to affect adversely the public health of Missouri.—Numerous attempts were made to pass bills in the 1943-1944 General Assembly with earmarks to lower the standards of medical practice in this state.—Through the educational efforts of the Community Health League and the cooperation of individual physicians, present medical standards have been maintained.

On September 21, 1943, the Missouri Constitutional Convention starts its official consideration of needed changes in the present Constitution.—Any proposed changes that might affect the health of the people in this state should be closely scrutinized by the medical profession.

ORGANIZATION ACTIVITIES

COMMITTEE ON STUDY OF CARDIAC DISEASES

The Committee on Study of Cardiac Diseases met in Jefferson City at the Missouri Hotel on June 20. The following were present: Drs. J. DeVoine Guyot, Jefferson City, Chairman; David B. Flaven, Drew Luten, R. O. Muether and Julius Jensen, St. Louis; Harry M. Gilkey, Kansas City; Charles Grabske, Independence; H. B. Norton, Hannibal; Leslie R. Webb, Springfield; C. Braxton Davis, Nevada; J. S. Summers, Stanley P. Howard, Frank W. Gillham and J. G. Bruce, Jefferson City, and Mr. Raymond McIntyre, St. Louis.

Mr. McIntyre reported that the Council of the Association felt that the Committee should continue to function as a committee under present conditions rather than as a section as the Committee had suggested. The Council commended the work of the Committee.

Dr. Guyot presented a paper on the history of the Committee and the objectives.

The work of the Metropolitan Life Insurance Company in regard to rheumatic heart disease was discussed and the Committee approved of this work.

A letter from the War Production Board stating that batteries would be easier to secure in the future for cardiologists was read.

Upon motion of Dr. Jensen, the Committee decided to devote its attention this year to the following propositions:

1. That the Committee hold an annual meeting at the same time and place as the State Association on the day preceding or following the regular session. That this meeting be devoted to cardiology with papers, clinical cases and exhibits.

2. That the Committee inform the various county societies of its desire and willingness to conduct one or more cardiac programs in their county and ask them to suggest the type of program desired and best fitted for their problems.

3. Cooperation with the Metropolitan Life Insurance Company in publicizing facts regarding rheumatic heart disease.

4. An effort to secure legislation giving hospitalization to cardiac children.

It was decided that material for the use of speakers should be maintained in a centrally located place.

The Chairman was instructed to ask the Council for funds to carry on the work of the Committee.

A motion to request a page in THE JOURNAL each month for articles on heart disease was carried.

J. DEVOINE GUYOT, M.D., Chairman.

MISCELLANY

LEGISLATION

STATE

The \$125,000 appropriation amendment to House Bill 417 for the establishment of the last two years of the University of Missouri Medical School in Kansas City was defeated on June 28 by a Senate vote of 17 to 16. Later a motion was made by Senator Glover of Kansas City to reconsider the amendment but such motion was defeated.

House Bill No. 300, the Doctor Prefix Bill, remained in the Public Health Committee of the Senate.

Senate Bill No. 98, the Basic Science Bill, was unacted upon in the Public Health Committee of the Senate.

House Bill No. 421, the Rheumatic Heart Disease Bill, was passed by both the House and the Senate and now awaits the Governor's signature.

Senate Bills No. 112 and 113, relating to narcotic drugs, remained in committee.

House Bill No. 590 which purported to redefine the practice of osteopathy in terms of the practice of medicine was dropped from the calendar and received no further consideration.

Senate Bill No. 79, relating to the regulation and inspection of foods and drugs by the State Board of Health, passed both the House and Senate and has been sent to the Governor.

Senate Bill No. 28, dealing with the reorganization of the Department of Vital Statistics of the State Board of Health, was passed by the General Assembly and now awaits the Governor's signature.

Senate Bill No 154, relating to malpractice under the Workmen's Compensation Act, remained in committee.

Senate Bill No 165, relating to state supervision under the State Insurance Department of group hospitalization and group plans for medical and surgical expenses remained in committee.

House Bill No. 575 proposing to amend the criminal

law concerning abortions was defeated when it came up for final passage in the House.

The General Assembly recessed July 17 until August 23 on which date it voted to adjourn.

FEDERAL

Obstetric Care for Wives of Service Men.—The President has approved H.R. 2935, making appropriations for the Department of Labor, the Federal Security Agency and related independent agencies, for the fiscal year 1944. This law appropriates \$4,400,000 for grants to States, including Alaska, Hawaii, Puerto Rico, and the District of Columbia, "to provide, in addition to similar services otherwise available, medical, nursing, and hospital maternity and infant care for wives and infants of enlisted men in the armed forces of the United States, under allotments by the Secretary of Labor and plans developed and administered by State health agencies and approved by the Chief of the Children's Bureau."

As reported to the House, June 14, H.R. 2935 carried the following proviso to the title of the bill making appropriations for the Department of Labor:

"PROVIDED, That no part of any appropriation contained in this title shall be used to promulgate or carry out any instruction, order, or regulation which discriminates between persons licensed under State law to practice obstetrics." The House Committee on Appropriations, in its report that accompanied the bill (H.Rept. No. 540) sought to justify the proviso in this manner:

"In connection with the appropriation bills for 1942 and 1943, the committee called attention to the action of the Children's Bureau in discriminating between persons licensed under State law to practice healing arts. The committee has been repeatedly assured by the Department that proper steps would be taken to obviate any discrimination but to date no definite action in that direction has been taken. The Children's Bureau has now arranged to have a study made to determine the relative merits of various types of schools giving instruction in healing arts. This is a matter which, in the judgment of the committee, lies entirely within the jurisdiction of the States. The States have established standards for licensing health practitioners and the Federal Government has never attempted to establish such standards. In the judgment of the committee, the Children's Bureau has not the power under law either to establish such standards or to question the standards established by the States. It is not the desire of the committee, of course, to permit the use of Federal funds to break down safeguards against the practice of healing arts by improperly and inadequately trained persons, but the committee does believe that the State laws and standards constitute the necessary protection for the public. Therefore, the committee has included in the bill a provision denying the use of the appropriation to promulgate or carry out any order, instruction, or regulation which has for its purpose the discrimination between persons licensed under State law to practice obstetrics."

As the bill was approved by the President, therefore, it contains the following proviso in the title relating to appropriations for the Department of Labor:

"Provided, that no part of any appropriation contained in this title shall be used to promulgate or carry out any instruction, order, or regulation relating to the care of obstetrical cases which discriminates between persons licensed under state law to practice obstetrics: *Provided further*, that the foregoing proviso shall not be construed as to prevent any patient from having the services of any practitioner of her own choice, paid for out of this fund, so long as State laws are complied with."

Investigation of the Educational and Physical Fitness of the Civilian Population as Related to National Defense.—The Senate has agreed to S.Res. 74, a resolution authorizing the Senate Committee on Education and Labor or a subcommittee thereof to make a full and

complete study and investigation regarding the distribution and utilization of medical personnel, facilities, and related health services and the deficiencies in health and education among persons otherwise fit for service with the armed forces and persons otherwise fit to be employed to the best advantage in agriculture, industry and other activities. This resolution, as agreed to, carries the following preamble:

"WHEREAS, The needs of the armed services for medical personnel has brought about acute shortages of doctors, nurses, dentists, and allied personnel in many areas; and

"WHEREAS, Many centers of war production lack adequate facilities for the maintenance of health; and

"WHEREAS, A large number of men have been rejected for military service because of physical or educational deficiencies; and

"WHEREAS, The physical and mental fitness of the Nation has a direct bearing upon the efficiency of both the armed forces and civilian efforts in the effective prosecution of the war: Therefore be it Resolved . . ."

The Chairman of the Senate Committee on Education and Labor has announced the appointment of a subcommittee to carry out the investigations contemplated by S.Res. 74. This subcommittee will be composed of Senator Pepper of Florida, chairman, Senator Thomas of Utah, Senator Tunnell of Delaware, Senator LaFollette of Wisconsin and Senator Wherry of Nebraska.

In a statement issued simultaneously with the announcement of the appointment of the subcommittee, Senator Pepper said:

"Facts made public by the Selective Service reveal a condition among the men rejected by our armed forces which reflects problems of health and education among our civilian population calling for Congressional study. I am gratified that the Senate has taken the recommendation of the Committee on Education and Labor to initiate such a study. I am honored that my colleagues have made me Chairman of the Subcommittee conducting this investigation.

"Probably it is unnecessary for me to say that I and my fellow members of this Subcommittee are solely interested in getting the facts and not in reflecting in any way on any section of the country or any group of people who have been victimized by conditions over which they have no control. We are going to make it our business to get the facts and to enlist in this undertaking every group in the communities toward which we direct our attention. We hope, in addition to holding hearings in Washington, to send members of our Subcommittee, one or two at a time, into the field.

"We believe that people in communities throughout the country are eager to have Congress know about conditions arising from wartime pressures and also from long-standing situations which the people of these localities have been unable to control without assistance. We look forward to having the cooperation of the medical and educational professions and civic groups, including public and private agencies throughout the country. We shall call as witnesses all sorts of people from the highest to the lowest walks of life, including those who have been the victims of conditions which as individuals they have been unable to control.

"It is our intention to do a thorough job, and we do not start with any preconceived plans. We think the facts will speak eloquently for themselves. We intend to keep Congress informed of our findings by interim reports to be issued from time to time."

Treatment of Selective Service Registrants Infected with Venereal Disease.—S. 1320, introduced by Senator LaFollette, Wisconsin, and pending in the Senate Committee on Education and Labor. A bill to provide for the treatment of Selective Service registrants infected with venereal disease.

Comment.—This legislation would direct the Surgeon General of the Public Health Service to provide, on the request of state and local health authorities, (1)

for the hospitalization, treatment, and subsistence in hospital facilities operated by the Public Health Service, of persons registered under the Selective Training and Service Act who are found to be infected with venereal disease, and (2) for the transportation of such persons between their homes and such facilities whenever necessary.

Creation of a Unified National Social Insurance System.—S. 1161, introduced by Senator Wagner, of New York, for himself and Senator Murray, Montana, and H.R. 2861, introduced by Representative Dingell, Michigan, companion bills proposing to create a Unified National Social Insurance System. Pending, respectively, in the Senate Committee on Finance and the House Committee on Ways and Means.

Comment.—This legislation would create a social insurance system to consist of a system of public employment offices, old age retirement insurance benefits, survivors' insurance benefits, permanent disability insurance benefits, lump sum death payments, protection to individuals in the military service, unemployment insurance benefits and allowances, temporary disability insurance benefits, maternity insurance benefits, medical and hospitalization insurance benefits, and social insurance contributions and a Federal Social Insurance Trust Fund.

Osteopaths as Commissioned Medical Officers in the Navy.—The Navy Department appropriation bill for the fiscal year 1944, H.R. 2713, has been approved by the President. It retains the language under which appropriations may be used to pay commissioned medical officers who are graduates of reputable schools of osteopathy. The language is permissive in form only.

The Congress adjourned July 8. It will reconvene on September 14, unless called into session earlier as provided in the adjournment resolution. Legislation on which action had not been completed July 8 will retain its legislative status and may receive consideration after the Congress reassembles.

BOOK REVIEW

RHEUMATIC FEVER IN CHILDREN, Its Recognition and Management. Approved by The American Heart Association, The American Academy of Pediatrics, The Children's Bureau of the United States Department of Labor, The United States Public Health Service. Published by Metropolitan Life Insurance Company, New York, N. Y.

"Rheumatic Fever in Children, Its Recognition and Management," is a thirty-two page clinical handbook written for the practicing physician which has just been released by the Metropolitan Life Insurance Company. It assembles under one cover the modern concepts of the disease; its nature, diagnosis and prognosis and the individual and community problems involved in the care of the patient. A group of distinguished clinicians and the following organizations assisted in its preparation: the American Heart Association, the American Academy of Pediatrics, the Children's Bureau of the United States Department of Labor and the United States Public Health Service. Other educational material has been developed by the Company in connection with its national program to reach the general public and the medical profession with information on this disease.

Single copies of the handbook are being made available to physicians, without charge, chiefly through the 16,000 field representatives of the Metropolitan Life Insurance Company. Physicians who wish a copy, and who have not secured one by June 1, should write to Dr. George M. Wheatley, Assistant Medical Director, Metropolitan Life Insurance Company, 1 Madison Avenue, New York, N. Y.

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ADIPOSOGENITAL DYSTROPHY (SO-CALLED FROEHLICH'S SYNDROME)

AUGUST A. WERNER, M.D.

ST. LOUIS

Babinski¹ in 1900 described the case of an obese girl who had retarded sexual development and a tumor in the region of the sella turcica. One year later, in 1901, Froehlich² described a similar complex in children, which bears his name, characterized by a rather generalized adiposity, retarded growth and arrested development of the genitals, in association with pituitary tumor. This syndrome was popularized in Vienna through the interest aroused by the discussion of Froehlich's paper. For a patient to be classified as a true Froehlich syndrome case there should be a pituitary tumor present. It is recognized that evident pituitary tumor in these cases is very rare; therefore, in this article adiposogenital dystrophy in childhood and adolescence will be considered.

In the last two decades much experimental work has been done which indicates that the hypothalamic region, in conjunction with the pituitary, exercises influence upon growth, sexual development, metabolism and obesity. Whether both the anterior and posterior pituitary and the hypothalamus are involved in adiposogenital dystrophy awaits further investigation.

The term "dystrophia adiposogenitalis" is descriptive of signs manifest in this condition and is not based upon a probable etiologic factor. The clinical evidence indicates that the syndrome results from pituitary hypofunction (possibly some hypothalamic influence), which is never complete for pituitary cachexia is not present. There are all gradations of this syndrome, from the typical to the near normal.

FACTORS INFLUENCING GROWTH AND SEX DEVELOPMENT

This hypofunction of the pituitary does not necessarily involve all pituitary hormonal factors in the same individual and then only in a variable degree.

From the Department of Internal Medicine, St. Louis University School of Medicine.

Some of these children are tall and have normal osseous development, which is compatible with a sufficient amount of growth hormone secretion; others are short, chubby and undersized for their age, which indicates a possible temporary decrease in the amount of, or failure of, the growth factors. These patients rarely become dwarfs but, usually after some delay, attain a reasonable growth.

The evidence for variability in amount of gonadotropic hormone secretion by the anterior pituitary is more noticeable in boys than in girls because of the external placement of the genital organs in males. The genital dystrophy in boys may consist of all degrees of cryptorchidism and pseudocryptorchidism. The testicles may be in the scrotum and be very small and of decreased consistency. The penis is usually small and short, but in some instances the length of the penis is greater than is apparent at first glance for the organ may be imbedded in a thick pad of suprapubic fat. Genital and axillary hair growth is absent or sparse in both sexes. In typical cases girls show delayed development of secondary sex characteristics with absent, delayed, scant or irregular menstruation.

FACTORS INFLUENCING FAT METABOLISM

The condition that attracts most attention in these children is the obesity. This adiposity is generalized, with accentuation over the pelvis, the abdomen, the breasts and the pubis, with a characteristic distribution on the hands. There is dorsal padding of the hands and first and second phalanges, with tapering distal phalanges. If this obesity occurs before approximately 10 years of age, this type of hand invariably will be present; if it occurs later than this age, then the adiposity is usually of the typical pituitary or girdle type, which involves the torso and the upper one half of the upper arms and extends to about the middle of the thighs. In my experience, the great majority of these children have been overweight since infancy or very early childhood.

It has been believed by some investigators that the posterior pituitary exercises influence upon metabolism of fats in the body. Obesity frequently occurs in hypophysectomized animals. Ranson,

Fisher and Ingram³ demonstrated that the posterior pituitary is connected with various nuclei in the hypothalamic region by a tract of nerve fibers which pass through the pituitary stalk.

Bailey and Bremer⁴ and Camus and Roussy⁵ do not attribute any importance to the hypophysis for the physiologic regulation of fat metabolism and for the development of obesity, because the symptoms that frequently are ascribed to pathologic changes in the hypophysis can be reproduced freely by experimental injury of the base of midbrain and especially of the tuber cinereum.

Raab⁶, experimenting with dogs, came to the conclusion that the hypothalamus contains the fat-regulating center. Destruction of the tuber cinereum or severance of the nerve pathways between the hypothalamus and the liver in dogs results in a marked increase in the circulating neutral fat which ordinarily is absorbed and metabolized by the liver. Raab also showed the dependence of the fat-regulating center in the hypothalamus upon a normal supply of pituitrin. The subcutaneous injection of several cubic centimeters of pituitrin caused the complete disappearance of the neutral fat from the blood. One tenth of the subcutaneous dose of pituitrin if injected into the brain ventricles produced the same effect. If, however, the tuber cinereum is mechanically destroyed, or if the nerve pathways between the tuber cinereum and the liver are severed, then the injection of pituitrin has no effect upon the reduction of the circulating neutral fat.

Raab concludes that "pituitrin promotes the absorption and destruction of circulating fat by the liver through nervous pathways, starting in the tuber cinereum and running through the cervical spinal cord and the abdominal splanchnic to the liver. Any disturbance of this cooperative pituitary-mesencephalic system would lead to a retention of excess fat amounts in the body and thus lead to obesity."

Bruch⁷ advanced the hypothesis that emotional experiences call into play functional disturbances of the hypothalamus, which may be of importance in the large group of obese children in whom no

organic lesion can be detected. Bruch obtained information regarding the eating habits of 136 obese children. The parents of 80 per cent thought that the children ate more than normal, and in the other 20 per cent the parents believed that the amount of food eaten was normal or small. She studied the emotional development of 40 of the patients and their mothers and concluded that the majority had been exposed to prolonged over-protection; which led to emotional experiences with resultant functional disturbances of the hypothalamus, overeating and obesity.

The majority of writers are of the conviction that obesity is a simple matter of excessive food intake. A normally active individual requires sufficient food to produce from 2,300 to 2,500 calories daily. The advocates of excessive consumption of food as the cause of obesity allow obese patients a diet having from 1,000 to 1,200 calories, which is a semistarvation diet. The fact that the patient loses weight on such an insufficient amount of food is not evidence of overindulgence but is evidence that the patient cannot metabolize a normal amount of food daily; it seems further evident that the cause is endogenous. Except in isolated instances, I believe that the cause of obesity must be sought within the organism.

POSSIBLE THYROID INFLUENCE

It is known that the basal metabolic rate in the great majority of these obese children is normal or slightly plus. However, most of them can take as much as from 1 to 4 grains of desiccated thyroid daily without evidence of intolerance such as rapid pulse and tremor. Anyone who can tolerate from 1 to 4 grains of desiccated thyroid daily positively needs thyroid, regardless of the metabolic rate. This clinical hypothyroidism may be secondary to pituitary insufficiency. That hypothyroidism may not be a marked influencing factor in the obesity of these children is indicated by the fact that great numbers of boys and girls during childhood and adolescence have very low basal metabolic rates and have normal weight or are underweight.



Fig. 1. Adiposogenital dystrophy in the patient described.



Fig. 2. The same boy after nine months of treatment.

The following case is typical of adiposogenital dystrophy in a boy.

REPORT OF CASE

The patient is a boy, aged 14½ years, whose weight at birth was 12 pounds. He erupted his first teeth at 3 months, all others early. He talked at 1 year and walked at 18 months. He has always been overweight for his age. His present weight is 193 pounds. Pulse is 88. He has had fatigability for the last four years. He learns a bit slowly and is in the seventh grade. His contact with other children is good. He has no somnolence or polyuria.

Measurements.—Upper measurement is 30½ inches, lower 37 inches, disproportion 6½ inches, span 67 inches. His hands are of the pituitary type with dorsal padding and tapering distal phalanges, as is found in juvenile pituitary obesity. The genitals are undeveloped; the left testicle is in the scrotum, the size of a very small olive. The right testicle is undescended. The penis is about 4 cm. long and has an elongated, overhanging prepuce.

Teeth.—The upper central incisors are broad and separated, the lateral incisors are somewhat narrowed and the others are in fair condition.

Laboratory Tests.—The urine and blood are normal. The blood Wassermann is negative and the sugar tolerance test is normal. The basal metabolic rate is plus 17 per cent. Roentgenograms of the hands, feet, elbows, pelvis and shoulders for osseous development are normal or slightly plus. The sella turcica is normal for age. The anterior posterior diameter is 8 mm. and the depth is 7 mm.

This boy was given 1 cc. pituitrin (obstetrical) every other day (omitting Sunday), plus 1 grain desiccated thyroid daily for nine months. He was not placed on a diet. His height increased 6½ inches and he lost 57 pounds in weight in nine months. Figure 3 shows the same boy at 20½ years of age.

The patient described in this article and whose pictures are shown represents only one of the many possible variations that may be manifest in adiposogenital dystrophy.

DISCUSSION

An attempt has been made to present the condition known as adiposogenital dystrophy, so-called Froehlich's syndrome, and to discuss the possible or probable etiologic factors.

If one adheres to the syndrome given by Babinski and Froehlich; viz., retarded growth and sexual development and pituitary tumor, then the number of cases that fit this description is relatively small. There are all gradations and variations of this syndrome. Growth may vary from retarded for age to normal; sexual development may be of all degrees from infantile to normal, with anomalies of development including all stages of cryptorchidism and pseudocryptorchidism.

The condition usually has its onset in early childhood, is carried into adolescence and may be present in adult life.

The most prominent characteristic of this condition is the obesity; it is also one of the most controversial subjects in medicine and endocrinology, unless one is willing to accept the belief of many who state that overweight simply results from excessive food intake.

Many of these patients are clinically hypothyroid, regardless of findings of the basal metabolism test.

Clinically, the failure of genital development is usually secondary to anterior pituitary hypofunction.

TREATMENT

There are those who state that these children will grow out of this condition in due time if nothing is done. This is wishful thinking in many instances. If one believes that the obesity is due to overeating, then a low caloric diet can be tried.

Whether or not the posterior pituitary is hypofunctioning in these cases, the fact remains that they can tolerate injections of from 1 to 2 cc. of obstetrical pituitrin daily, or every other day, with no untoward symptoms, except paleness and a desire to defecate within fifteen or twenty minutes after the injection. These are the criteriae for dosage. Further evidence that the posterior pituitary may be hypofunctioning in these children is the inability of children of normal weight, who do not have adiposogenital dystrophy, to tolerate even small amounts of obstetrical pituitrin because of the severe reactions produced.

These children can tolerate from 1 to 4 grains of desiccated thyroid daily without undue acceleration of the pulse, above 90 to 95, or the development of a thyroid tremor.



Fig. 3. The patient at age of 20½ years.

For the genital dystrophy, if the condition is cryptorchidism or pseudocryptorchidism, intramuscular injections of chorionic gonadotropin, or anterior pituitary gonadotropic extract may be given every other day. If dosages of from 200 to 500 rat units every other day fail to cause descent of the testicles within one month, it is probable that there is obstruction and surgery may be necessary.

Testosterone in 10 to 25 mg. dosages, injected intramuscularly every other day, over a period of from one to four months will cause development of the secondary sex characteristics, but it will not cause the testicles to develop and function. Care must be exercised in injecting relatively large dosages of testosterone into children and young boys for precocious puberty can be produced.

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CONTACT DERMATITIS

ITS DIAGNOSIS AND TREATMENT

NORMAN TOBIAS, M.D.

ST. LOUIS

Contact dermatitis ranks among the four common diseases of the skin. It is of special interest at this time for the following reasons: (1) Early diagnosis prevents incapacitating dermatitis; (2) new synthetic and ersatz materials and war-time formulas of proprietary drugs have increased the number of these cases; (3) exposure to sensitizers is more common because of the increase in defense industry workers; (4) advertising campaigns during the summer months tend to stimulate sales of proprietary drugs, cosmetics and soaps; (5) the shortage of physicians may lead to self-medication and an increase in this type of case.

The healthy skin, in spite of its exposed nature, is capable of resisting occasional exposures to irritants and sensitizers by its peculiar tough construction and its thickness (except the eyelids, anterior surface of the neck, genitals and interdigital spaces). The protective pigment barrier, the presence of hair, the protective sebaceous and diluent effect of the sweat glands, the inherent defense mechanism of the skin and the ability of the skin to maintain a constant pH in the presence of foreign electrolytes are also important protective devices.

An acceptable definition of the term is in order. It is an eczematoid dermatitis occurring in certain individuals, localized at least in the beginning, and

is characterized by an acquired epidermal sensitivity to occasional, repeated or continuous accidental, known or unknown external contacts with a vegetable, mineral, chemical or animal substance of simple or complex nature. The sensitizer is called a contactant. The skin reacts wholly out of proportion to the type or nature of the irritant. These substances are harmless in the sense that normal nonsusceptible persons may come in contact with them with no resulting cutaneous response.

The reaction does not occur until a variable latent period follows the first contact. This distinguishes contact dermatitis from dermatitis venenata, which is an immediate reaction in 100 per cent of individuals coming in contact with a universal irritant such as acids, strong alkalies and their salts.

Clinical Types.—The acute types, e.g., poison ivy, are characterized by erythema, edema, vesicles, bullae and extreme itching, stinging or burning sensations. This type is usually extensive, spread by scratching and very sensitive to local medication. The subacute types are more localized and only moderately inflamed, papular or scaly and slightly infiltrated. The chronic types are less inflammatory, with scaling or fissures, and more infiltrated. There is often a history of recurrent flare-ups during contact with the sensitizing substance.

Etiology.—The mechanism of this type of sensitization (allergy) is unknown but it is not hereditary and, in the simple types, antibodies are not present in the blood stream as in the allergic atopic eczema types caused by ingested, inhalant or absorbed allergens.

A review of 212 cases of contact dermatitis seen in private and clinic practice from January 1941 to January 1943 produced some clinical data that may be of interest to physicians who are called upon to diagnose and treat this type of case.

COMMON CONTACTANTS IN ORDER OF FREQUENCY

Plants (21 per cent): Poison ivy, primrose, sumac, ragweed.

Proprietary drugs (20 per cent): Noxema, Vicks vapo-rub, Sloan's liniment, Zemo.

Cosmetics (16 per cent): Soaps, nail polish, hair dye, hair tonics.

Professionally prescribed or used (16 per cent): Sulphur ointment, ammoniated mercury, Whitfield ointment, tar ointment, metaphedrin nose drops, tincture of iodine, phenolated lotions and ointments, calmitol, butesin picrate ointment, sulfathiazole ointment, and adhesive plaster.

Druggist prescribed (12 per cent): Sulphur ointment, blue ointment, liniments, unknown ointments and lotions.

Household products (5 per cent): Oxydol, soaps, chlorox, furniture polish, insecticides (oil of citronella, pyrethrum) shoe polish, turpentine, paints, oilcloth, lysol.

Occupational (4 per cent): Cutting and machine oils, gasoline, cement, plaster, turpentine, paint removers, formalin, flour, rubber cement, dyed leather.

Wearing apparel (3 per cent): Black or dark blue dyed dresses, furs, wool sweaters, rubber dress shields, brassiere strap adjusters, leather footwear, white gold jewelry, dyed gloves.

Unknown cause or causes (3 per cent).

DIAGNOSTIC METHODS

In one third of the cases, the diagnosis is self-evident; in about two thirds of the cases, the cause usually is found after a few days' study. Less than 1 per cent may prove baffling even to the experienced.

1. *Pattern and Character of the Eruption.*—The simple case consists of a sharply defined patch or eruption with an artificial appearance located at the site of contact, e.g., wristwatch strap dermatitis on the wrist. It does not resemble any of the usual dermatoses, has no fixed or characteristic distribution and is often asymmetrical. In the more complicated cases, there is a more or less localized erythematous dry, moist or scaly dermatitis. The appearance of the lesions may change from day to day depending on the frequency, duration and nature of the contactant.

2. *Regional Site of the Eruption.*—The localization of the eruption, which often suggests the contactant to the expert, coincides with the point of maximum exposure. Thus an eruption in the armpit may be due to a particular sensitization to a rubber dress shield, a deodorant or a dress dye. Patch tests are then used to discover the specific irritant.

3. *Reaction Period.*—It is important to determine the periods during the day or night, week, month or season when the eruption appears or increases in intensity. All the possible contactants in these periods are then listed, analyzed from the standpoint of cause and effect, and verified, if possible, by patch testing. Seasonal flare-ups may suggest wool clothing, "cold" medication, ragweed or plant irritants. Week-end flare-ups may suggest the Sunday rotogravure pages, perfume, "Sunday best" or sport garments, or contacts associated with hobby, garden or sports. Periodic flare-ups suggest sensitizers in the barbershop, theater, beauty parlor, gymnasium or plants in the home. Nocturnal flare-ups suggest the pillow, pajamas, cosmetics used before retiring or contraceptives. The physician who is well acquainted with the habits, customs, details of employment and modus vivendi of a patient is at a distinct advantage in finding the sensitizer.

4. *Periods of Absence of Symptoms.*—In spite of continued contact, periods of freedom may be due to alternating cycles of sensitivity and immunity. Usually, however, it means freedom from contact with the irritant. Week-end amelioration

may suggest that the sensitizer may be found in the patient's office or place of employment.

5. *History.*—The patient's story should be guided by proper questioning to unravel the sequence of cause and effect. Otherwise, the physician will be lost diagnostically. A definite history of the eruption appearing after the continued use of a new or old ointment, lotion, cosmetic or liniment, may be obtained from an intelligent patient. Recent employment and possible contacts with new sensitizers are suggestive. In some cases the patient can not offer any light on the cause until he goes home to confer with the family, think it over and "sleep on it."

6. *Procedures if Cause is Unknown.*—Special investigation is necessary. When a flare-up occurs in a patient with chronic contact dermatitis, the sensitizer may be discovered by asking the patient what he was wearing, using or doing at that particular time. Patch tests are then made with all the suspected substances. The choice of these tests depends on the exposure possibilities. Indirect contacts, e.g., husband's hair tonic or eruption on the arm from applications used on the scalp, must also be checked. An hour to hour chart listing all the possible direct and indirect twenty-four hour contacts may provide important information not otherwise obtainable.

7. *Therapeutic Response.*—Be suspicious of an eruption that has been treated by too many physicians with too many applications. Overtreatment is a common and often serious error. A patchy eruption that responds to simple medication up to the point of healing and then flares up, should arouse suspicion of contact dermatitis.

8. *Improvement Following Removal of the Cause.*—This statement requires no further comment.

9. *Knowledge of Specific Irritants Affecting Specific Sites.*—Standard dermatologic textbooks contain a list of sensitizers and their common sites of reaction. One must also be aware of new sensitizers that appear from year to year for there are fashions in contactants as well as in women's hats or architecture. In 1817, Thomas Bateman¹ listed sugar, arnica, mercury, tartarized antimony, cashew nut oil and knee breeches as common sources of eczema in that period. Today, one must consider such new irritants as elastiglass, resin finishes on underwear, plastics, nail polish, nylon, wooden jewelry and sulfonated oils.

10. *The Passive Transfer Test.*—This is usually negative unless general sensitization has developed. This is a test employed by the expert to determine the presence of circulating antibodies.

11. *Clinical Test.*—In the face of a negative patch test, all suspected sensitizers are avoided for a week or longer until improvement in the eruption occurs. Then each one is permitted to come in normal contact with the skin for a week at a time until a flare-up occurs. Thus the causal sensitizer is tracked down.

12. *Patch Tests.*—There are epidermal tests

using dry, liquid or volatile chemical, vegetable or mineral substances to determine individual susceptibility. In themselves they are of no definite value in diagnosis but in conjunction with a good history they are a diagnostic aid. They should be made and the results, positive or negative, evaluated by the expert. The proper method of performing these tests can be found in standard dermatologic textbooks.

A positive patch test may indicate that the substance used is the true cause of the dermatitis; or it may simply mean the substance is a universal irritant in the concentration used, if a liquid, and that a positive skin test would be obtained on anybody's skin.

Few physicians are aware of the importance of the negative patch test. It may indicate that (1) the substance used was not the cause of the dermatitis; (2) the dilution used was too weak to produce a visible reaction; (3) the test was read too soon (in some cases a reaction may appear as late as thirty days); (4) the site chosen was refractory or too far from the area of the dermatitis; (5) the test was made too late and hypersensitivity had disappeared; (6) the test did not faithfully reproduce all the factors at the time the eruption was acquired, e.g., friction, moisture, perspiration, vasomotor imbalance, fatigue, sunlight and various unknown conditions.

COMMON TYPES OF DERMATITIS

Sulphur dermatitis is the commonest type of contact dermatitis acquired via the doctor's prescription pad. There were twelve cases in my series. Yet, sulphur is the best drug in the treatment of scabies if prescribed in the proper strength and under proper guidance. Three of my patients gave a history of going from physician to physician seeking relief for an ever increasing itching. Since each physician prescribed some form of sulphur, the inevitable result can be left to the imagination. Three patients were advised to use sulphur ointment until they were free of itching. As a result, a 9 year old child used it for a month and two adults used it for two weeks or longer.



Fig. 1. Contact dermatitis from overtreatment with Whitfield's ointment.

In three cases a dermatitis produced by U.S.P. 10 per cent sulphur ointment was aggravated by polysensitivity to phenolated ointments. In two cases, the diffuse sulphur dermatitis was intensified by the continued use of laundry soap for bathing. In one case, the patient was not satisfied with the physician's sulfo-foam applicators and secretly used in addition collateral treatment in the form of Massengill's scabies lotion.

Nail polish dermatitis is frequent and may be unsuspected as a cause of a patchy recurrent dermatitis of the eyelids, cheeks, side of the neck, chin, chest, ears or nasolabial folds. In this series there were 14 cases, all in women from 14 to 55 years of age. Itching was a prominent factor in all the cases. The duration of the condition ranged from one week to four months. In six of the cases the eruption was limited to the left upper eyelid. Patch tests were positive in eight or 57 per cent.

Primrose dermatitis is a common form of plant dermatitis and is often acquired from plants in the home. The eruption is not as inflammatory as rhus dermatitis, is often patchy and erythematous, not bullous. The condition usually affects the flexor surfaces of the forearms, wrists and the fingers. In most cases the eruption clears up to a greater or lesser extent between exposures. The four cases in this series were in housewives who watered and trimmed the plants several times a week.

In each case the diagnosis of nail polish dermatitis had to be eliminated. When the plants were discarded, the eruption cleared up within a week.

Soap dermatitis is a common dermatosis in housewives, children, dishwashers and soda fountain clerks. In this series 92 per cent occurred during the winter months.

In the occupational cases, the right hand was affected in 59 per cent, both hands in 41 per cent. The face and buttocks were frequent sites in children.

In housewives, the interdigital spaces and dorsum of the hands were commonly affected. The clinical lesions were a chapping in 60 per cent, papulovesicular in 23 per cent and vesicular in



Fig. 2. Soap dermatitis in a housewife.

17 per cent. Treatment is unsatisfactory as co-operation is frequently not obtained in women who must do their own housework and recurrences are the rule.

Therapy consists of (1) avoidance of all soap and soap powders, (2) substitution of a sulphonated oil (acidolate or many others on the market) for soap, (3) greasy soothing ointment applications, and (4) vitamin A in large doses.

COMPLICATIONS

Secondary complications may add difficulty to the diagnosis of a simple contact dermatitis. Pyoderma or impetigo often occur in the unclean or during the summer months from friction or scratching and may confuse the examiner. Localized neurodermatitis with thickening of the skin may appear in the nervous and high-strung individual from persistent and often unconscious rubbing and scratching. Eczematization with a resultant exudative dermatitis may be caused by strong topical applications. Pompholyx with large painful bullae on the palms and soles may develop in extensive cases. Atopy is an unusual but serious complication. It is due to the transepidermal absorption of the contactant resulting in blood-borne generalized sensitization. In these cases a patchy eczema appears at a distance from the original site of the dermatitis with involvement of the antecubital and popliteal spaces, face and neck. This condition is characterized by extreme chronicity and refractoriness to treatment.

DIFFERENTIAL DIAGNOSIS

Contact dermatitis may be confused with various conditions depending on the stage of the disease and the involved site. Space does not permit a detailed consideration of the subject. As a general rule an area of dermatitis improved by the use of a sulfathiazole or tar ointment is not contact dermatitis. As an example of the extreme care required in making a diagnosis, eruptions on the face may be mistaken for erysipelas, impetigo, seborrheic dermatitis or even lupus erythematosus. Often a short period of clinical observation



Fig. 4. Contact dermatitis from nose drops. The preparation was metaphedrin inhalant which contains metaphen 1:5,000, an organic mercurial antiseptic.

is necessary for the correct diagnosis to be established or confirmed. In those cases that offer confusion, a biopsy may settle the question.

PROGNOSIS

The outlook is good once the exciting cause is found and removed from the environment of the patient. In cases of chemical dermatitis, the eruption usually responds to soothing lotions within a week. Where generalized hypersensitivity is present, as in many cases of dye sensitization, the eruption may persist for months and the skin remain intolerant to any but the mildest of lotions.

TREATMENT

The object of therapy is (1) to control the itching and (2) to hasten resolution with a minimum of local measures. Wet dressings and simple lotions are preferable to ointments. The popular calamine lotion may aggravate some cases. If it contains phenol the patient may be sensitive to it. Dry and senile skins often are chapped and irritated by its frequent use.

Prophylaxis.—The contactant must be removed from the environment of the patient or, if this



Fig. 3. Contact dermatitis from rubbing alcohol (containing acetone).



Fig. 5. Contact dermatitis (shoe dye). Frequently confused with dermatophytosis.

is impossible, the patient must be removed from the causal environment. To prevent recurrence in occupational cases, the skin should be protected by both direct measures (gloves, aprons, tools, protective ointments) and indirect measures (ventilation, exhaust fans).

Local Therapy.—Local therapy must be as mild and as simple as possible. It is well to remember that in some cases the unaffected areas of the skin may be hypersensitive as demonstrated experimentally by Brunsting and Bailey² and proper measures taken to avoid eczematization and auto-sensitization. Cleansing of the affected parts should be done with a light mineral oil or zinc cream (zinc oxide and lanolin 15 gm. in equal parts of olive oil and lime water to make 100).

Chronic cases often respond to moderate doses of roentgen ray therapy. A 1 to 2 per cent crude coal tar ointment in an aquaphor base is soothing and often stimulates healing.

Nonspecific therapy with milk proteins or whole blood may stimulate a response in resistant cases.

Specific desensitization has been successful in some cases of plant, flower, wool, wood dust and flour dermatitis. Mineral and chemical products are in general too toxic for this type of therapy, but experiments are being made based on the work of Ridley and McLean³ using solutions rendered nontoxic by admixture of the patient's own blood serum. The value of this method cannot be estimated until more clinical and experimental data are at hand.

SUMMARY

1. A list of frequent cutaneous sensitizers as encountered in private and clinic practice is tabulated.
2. Although the diagnosis of contact dermatitis is relatively simple in one third of the cases, diagnostic principles are listed to determine the sensitizers in those cases that offer difficulties.
3. Many cases of contact dermatitis are caused by professional overtreatment.
4. The principles of therapy are discussed.

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THE ELLIS FISCHEL STATE CANCER HOSPITAL

A REPORT TO THE PHYSICIANS OF MISSOURI

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COLUMBIA, MO.

The Ellis Fischel State Cancer Hospital in Columbia opened in May 1940 and has been in continuous operation to date. This is a report of the activities of this hospital presented to the physicians of Missouri. Through February 28, 1943, 3,374 patients have been seen and there have been 13,225 clinic visits. As the spot map indicates, these patients have come from practically every county in

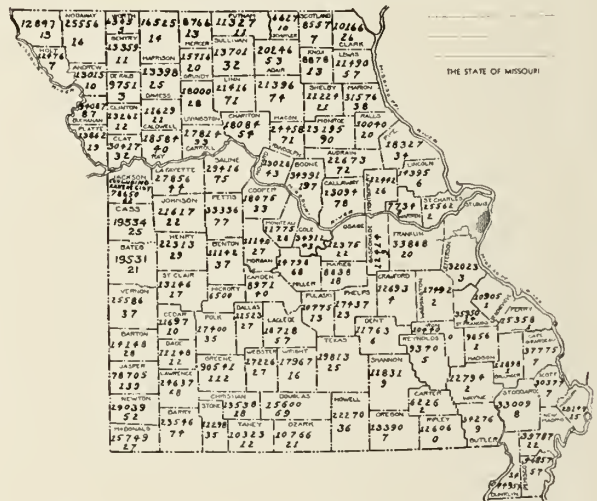


Fig. 1. The large figures represent the total population in the individual counties and the small figures the number of patients referred to the State Cancer Hospital from May 1, 1940, to March 1, 1943.

the state with the exception of the St. Louis and Kansas City districts. The 931 physicians who have sent patients to the hospital make up 48.6 per cent of all the physicians in the State of Missouri, exclusive of Kansas City and St. Louis. One physician sent forty-nine patients.

At the time the hospital opened the practice was instituted of sending to the referring physician at the time of the patient's discharge a complete summary of the patient's course and treatment. After each follow-up clinic visit, a letter reporting the findings was sent to the physician. Due to the war, with its resultant depletion of the staff it is now impossible to do more than send one complete summary at the time of the patient's discharge from the hospital.

According to the state law, all cases admitted to the hospital must be indigent, as certified by the patient's local county court, and a diagnosis of carcinoma or precancerous condition must be made by the referring physician from that county. All patients admitted to the hospital with malignant

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disease are treated from a curative or palliative approach. Patients with advanced disease which cannot be benefited by treatment are not admitted. The average hospital stay per patient for 1942 was only 18.5 days. The cost per patient day was \$6.30, which is very low for this type of specialized hospital. Any effort to compare the average per diem costs of this or other similar hospitals of highly specialized nature with those of the average general hospital is as misleading and erroneous as the comparison of the general hospital with those of the primarily custodial institutions. Many of the patients entering this hospital are diagnostic problems, while others represent difficult surgical cases requiring long preoperative and postoperative care combined with a great deal of expensive laboratory work. This type of case is well illustrated in the report by Wiley.⁸ The treatment of patients with carcinoma of the cervix and breast, as well as those needing plastic repair or abdominal surgery, is particularly costly.

Approximately 40 per cent of the proved carcinoma cases and 25 per cent of the total surgical pathologic cases are made up of skin lesions. Biopsy of every skin tumor before treatment is mandatory. In any review of treated skin carcinomas, pathologic confirmation of the diagnosis must be available. No evidence has ever been seen at the hospital of spread of tumor through biopsy. A melanocarcinoma may resemble grossly a basal cell carcinoma, but the first is treated by radical surgical excision and the second usually by radiotherapy. Syphilis, tuberculosis and ringworm can simulate the field fire type of basal cell carcinoma and many superficial keratoses suggesting carcinoma are benign. Carcinomas of the skin when first seen are often small, easily cured and, consequently, thought to be of a trivial nature. However, if these tumors are excised inadequately or only partially destroyed by roentgen-ray, cautery, caustics, contact radium or other agents, on recurrence they may present a serious problem. After a basal cell carcinoma has recurred in relatively avascular scar tissue and perhaps has invaded bone, often, little can be done except to delay inevitable death.

Carcinoma of the rectum is a fairly common lesion in this hospital and of eighty-one consecutive cases, fifty-seven, or 70 per cent, were resectable. A one stage abdominoperineal resection has been done in nearly every case. If the prostate, segment of small bowel, posterior vaginal wall, uterus, fallopian tubes or ovaries apparently were involved, the operation was extended to include that organ. Operative mortality thus far has been 10 per cent.

Carcinoma of the stomach is the most common malignancy in the United States and causes about 38,000 deaths yearly. Any patient, but particularly a male, in the older age group, with vague, unexplained gastrointestinal symptoms, anemia or unexplained weight loss, should be suspected of having carcinoma of the stomach. A great percentage of these patients have occult blood in their

stools. About from one fourth to one third of all carcinomas of the stomach are resectable. Of those resected, about 20 per cent survive five years. To date, the hospital has had forty-three cases, a number far below the expected incidence. If there was no distant metastases, every case was subjected to exploration for this, in the minds of the hospital staff, is the only means of determining whether or not any given case is operable. Thirty-five of these cases were explored and twelve were resected. Four died after operation. One of the remaining eight already has recurrent disease and seven are free from disease from one and a half months to two years and five months.

According to many statistics, bronchogenic carcinoma rates from second to fourth place in incidence; yet we have had only four cases since the hospital opened. At Barnes Hospital in St. Louis, a great number of cases of carcinoma of the lung are seen annually. However, checking their figures for 1942, only twenty-three out of seventy-four cases came from Missouri. Of the twenty-three cases, twelve came from the Kansas City and St. Louis districts, leaving eleven from rural Missouri. It is to be suspected, therefore, that cases of bronchogenic carcinoma are masquerading under the diagnosis of chronic pulmonary tuberculosis, asthma, lung abscess or unresolved pneumonia. There is no doubt but that the diagnosis of bronchogenic carcinoma is difficult and often requires the services of a roentgenologist, bronchoscopist, pathologist and surgeon. In the cases at the State Cancer Hospital two were explored and the other two had distant metastases.

The only chance of cure for either carcinoma of the bronchus or carcinoma of the stomach is surgical resection of the diseased area. Radiotherapy has never been proved to be of value in either instance. The experienced surgeon should not hesitate to explore the thoracic cavity when carcinoma of the lung is suspected. In carcinoma of both the stomach and lung, if nothing is done, death is the inevitable result.

Carcinoma of the breast is one of the most common tumors. Unfortunately, the majority of these cases are far advanced when first seen at the State Cancer Hospital, with distant metastases and often ulceration and fixation of the tumor. In spite of good medical advice, patients usually delay their appearance at this hospital until the disease is inoperable. The reasons given for the delay are the usual ones: "I was afraid it might be cancer," "It did not give me any pain," or "I came because it started to bleed." About 150 cases of carcinoma of the breast are seen yearly and about fifty radical mastectomies are being done. Thus far, there have been no operative deaths. Of 100 consecutive cases of carcinoma of the breast, only thirty-eight were operable. Of these thirty-eight, only ten had negative axillary lymph nodes. It must be emphasized that every axillary lymph node is pathologically examined, and several cases in this group had only one or two nodes (out of a total of twenty

or thirty examined) involved with disease. If I say that fifteen out of this group of 100 were cured, I am giving a generous estimate.

It is certainly true that all the indigent cases of cancer in Missouri are not being seen. There have been times in the past when there was a waiting list of almost 100, at which times the principle was adopted of admitting at once any patient with a malignancy which might conceivably become too advanced for cure if entry into the hospital was postponed. This principle applied particularly to malignancies of the breast, stomach, rectum, bone and certain other organs. If, however, the application indicated that the patient had distant metastases or had had a skin carcinoma for some twenty years, it did not seem reasonable that a week's delay in this type of case would make any difference in the prognosis. There has been no delay in the admission of patients after their applications have been received. However, rather frequently, a delay ensues because certain of the county courts convene at rather infrequent intervals.

The opinion has been expressed that "other centers should be established in the state for at least the diagnosis and classification of cases, if not for their treatment. These centers can be established by the Cancer Commission at conveniently located state hospitals and city hospitals and could work in conjunction with the central hospital at Columbia."¹⁰ The bill for the establishment of a state cancer hospital provided for such cancer clinics, but stated, "All clinics are to be administered by committees appointed by the local medical organizations (county medical societies). These committees would have charge of the administrative details connected with their respective clinics, but in all cases they must conform with the minimum standards set by the Cancer Commission of the State of Missouri. The Cancer Commission of the State of Missouri is empowered and directed to establish cancer clinics in the larger cities of the state *on request of the local medical societies.*" (Italics are mine.) It is hoped that when the added burden which has been placed on the local groups as a result of the war is removed these requests will be made. Thus far, not a single application has been received. It is felt that cities such as St. Joseph, Joplin and Springfield would be ideal locations for such cancer clinics.

The advisability of research in a hospital of this character has been discussed. During the last three years, the staff has devoted most of its time necessarily to the organization of the hospital and the care of the patients. The organization is now complete and nine articles on clinical material already have been written by physicians at the hospital.^{1, 2, 3, 4, 5, 6, 7, 8, 9} During these three years of organization, large numbers of cases in various categories have been assembled. All groups have been treated uniformly. Case records have been kept and adequate cross-index files have been set up to make information on each case readily available. Pathologic confirmation of all cases has been

made whenever possible (approximately 95 per cent).

There can be no question but that with available material, clinical and laboratory research should be done. Cancer hospitals such as the Memorial, Pondville and Huntington have made frequent and valuable use of their material, which not only has aided physicians in the treatment of their own and other patients but has contributed substantially to the general knowledge of cancer. It is from institutions like these and this one that definite conclusions can be reached as to the efficacy of some particular type of treatment. Residents and fellows working under the direction of our staff could and should be doing research either on a phase of a broad problem or on various separate problems relating to different types of tumors. In the original bill providing for the establishment of this hospital, provision was made for research and there are extensive facilities and material for clinical and animal experimentation.

The physicians of Missouri are, to a great extent, responsible for the future of this hospital as it is they who first see and diagnose the material handled in the hospital. The distribution of the various types of tumors and their stage of development is partially dependent on them. Those at the hospital appreciate the cooperation which has been given and feel that the physicians in the state are doing a wonderful job. The members of the staff are willing to meet with any medical society to discuss various phases of the cancer problem. The staff is glad to have the privilege of reporting its methods of treatment.

The distribution of carcinomas at the State Cancer Hospital does not conform with accepted statistical studies. It might be pertinent to consider how many of the patients have true carcinoma. A thousand consecutive cases were analyzed¹¹ and only 52 per cent had malignant disease. Forty-three per cent were proved definitely not to have carcinoma and 5 per cent could not be classified. Of the non-malignant lesions, 341 were located in the uterus, skin, breast, stomach, rectum, penis and sigmoid. Biopsy is done quite easily on all these organs except the stomach. If there were a tumor diagnosis service at the Cancer Hospital, the majority of these 341 patients would not have needed to make the trip to Columbia. The money spent on their transportation alone would have more than paid for such service, which would cost about \$5,000 a year. (Definition: A tumor diagnostic service is a service by which any physician could send tissue placed in a fixative to the laboratory and receive a microscopic diagnosis.) Reports could go to the physicians within twenty-four hours after receipt of the tissue. It is hoped that such a service may be set up in this hospital. Such a diagnostic service has proved to be of great value both in Massachusetts and in New York. Their laboratories accept only those specimens with a question of malignancy and do not restrict their service to indigent patients. The number of speci-

mens received by both states has increased considerably every year. A request for such a service in our state must come from the State Medical Association.

It is hoped that an increasing number of physicians from the state will visit the institution personally. Probably, the most advantageous time for such a visit would be on a Wednesday afternoon when the largest follow-up clinic is held. However, physicians are welcome to come to the regular combined pathologic-roentgenologic conference on Tuesdays at 4:00 p. m., and the general discussion conference on Wednesday evenings from 7:00 to 9:00 p. m., when usually a single type of tumor is taken up. A full surgical schedule keeps the operating room busy in the mornings and Dr. Sugarbaker is always glad to have visitors.

The following statistics for 1942 may be of interest.

Major operations	407
Minor operations	832
Surgical specimens	2,485
Autopsies	52 or 80 per cent
Total number of procedures done in laboratory	35,729
Average daily census	83.9
Average hospital stay per patient	18.5 days
Average cost per patient day	\$6.30
Total number of patient days in hospital	30,611
Total number of new patients seen	1,207
Total number of clinic visits	5,328

There have been many changes in the personnel. Dr. Theodore Eberhard, the Medical Director and Radiotherapist, came from the Presbyterian Hospital and was a graduate of Western Reserve. He left for the Army in November 1942. Dr. Juan del Regato, who had his training under Coutard, has taken Dr. Eberhard's place as radiotherapist. Dr. Eugene Bricker, graduate of Washington University, who studied under Dr. Evarts Graham, spent over two years with the hospital and left for the Army in January 1942. Dr. Everett Sugarbaker, graduate of Cornell University, who studied at the Memorial Hospital in New York and in the Lahey Clinic, took Dr. Bricker's place. Mr. James L. Rogers, the Administrator, after service of two years, also left for the Army, and his place was taken by Mr. Richard Connor, Assistant Administrator of the University of Iowa Hospitals. Dr. David Le Mone continues as our competent Diagnostic Roentgenologist.

The cooperation and help we have received from Washington University has been of great value. Students from the senior class have come to the hospital for two month periods. In such a short time, the staff does not try to make cancer specialists of them, but has tried merely to give them a picture as a whole of the cancer problem. The Cancer Commission has been very farsighted in its policies and without its wholehearted cooperation the hospital could not have progressed. The consulting staff, numbering fifty-two members, has been generous with its time and help. This staff has been holding four meetings a year at this institution, but the war has curtailed its activities.

It is anticipated that the institution will continue

to grow, and that in time it will fulfill its three duties. These consist of taking care of the indigent patients with cancer, disseminating knowledge of cancer to both laity and physicians and carrying out a constructive research program.

Ellis Fischel State Cancer Hospital.

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SODIUM SULFOCYANATE (THIOCYANATE) IN THE TREATMENT OF HYPERTENSION

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ST. LOUIS

Hypertension has been treated for many years with the salts of sulfocyanates (thiocyanates) and that they act as a depressor of the arterial blood pressure has been shown definitely.¹ Their actual mode of action is not clear but it is believed generally that they act as a general protoplasmic poison, being stored in the body cells.² It is possible by this means that they cause dilatation of the peripheral arterial system. More recently, investigators have shown that a small concentration of sulfocyanates is normally present in the blood and that patients with hypertension have a lower concentration than those with normal blood pressures.³ These salts have definite general toxic effects when concentrations are allowed to go above those levels accepted as being safe, namely, from 8 to 12 mg. per cent.⁴ It is believed that a concentration as high as 20 mg. per cent is the danger level and that symptoms usually do not occur with concentrations below this level.⁵ The dosage required to obtain satisfactory levels varies considerably. The kidneys are probably the only means of elimination and thus the dosages required to obtain a therapeutic concentration will vary with the renal function.⁶ There are certain contraindications to the use of sulfocyanate (thiocyanate). It should not be given to patients who have had cerebral accidents, the very old and debilitated, and those having severe kidney or coronary artery disease.⁷

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METHODS AND RESULTS

The patients treated in this series are chiefly those thought to have essential hypertension. They were followed in the outpatient department of the St. Louis City Hospital. Patients were seen at weekly intervals insofar as was possible. Blood concentrations were determined each week. The blood pressure was taken by the same individual each time under practically identical conditions. The sodium salt of sulfocyanate was used.*

The present series consisted of twenty-four females and nine males. Their ages are given in table 1 and, as can be seen, most of the patients were beyond 50 years of age.

Table 1. *Ages and Sex of Patients*

Ages (Years)	Male	Female
30-40	0	2
40-50	1	2
50-60	3	11
60-70	5	9

The nonprotein nitrogen was determined on twenty-three of the patients and the urea clearance on thirteen. In general, the lower the urea clearance and the higher the nonprotein nitrogen, the longer the period required to excrete the drug and the higher the concentration obtained with the usual dosage.

Table 2. *Nonprotein Nitrogen and Urea Clearance*

N.P.N.	Number of Patients
15-25	13
25-35	6
35-45	5
(None over 55)	
Urea Clearance Normal (Per Cent)	4
20-35	3
50-60	4
60-70	2

From four to six blood pressure readings were taken before the patient was given any drug to establish a base line of the patient's blood pressure. Concentrations of from 8 to 12 mg. per cent for a period of at least two weeks were maintained,

Table 3. *Blood Pressure of Patients*

Average Systolic Blood Pressure Before Treatment	Number of Patients
180-190	4
190-200	6
200-210	6
210-220	7
220-230	2
230-240	4
240-250	3
(One of 300+)	1
Average Diastolic Blood Pressure Before Treatment	Number of Patients
90-100	4
100-110	13
110-120	6
120-130	3
130-140	3
140-150	3
(One of 200)	1

*I wish to thank the Tilden Pharmaceutical Company for donation of the material, Haimased, used in this study.

as far as possible, in most of the patients. Some were kept on the drug for longer periods of time. An average of both the systolic and the diastolic blood pressures were determined for each patient. The results are given in table 3.

The average drop in blood pressure was determined on the majority of patients after concentrations had reached from 4 to 5 mg. per cent. This level was taken because several of the patients obtained a moderate drop in blood pressure on concentrations as low as from 4 to 5 mg. per cent. The changes in blood pressure are summarized in table 4.

Table 4. *Changes in Blood Pressure*

Mm. Drop in Systolic Blood Pressure	Number of Patients
5-10	3
10-15	5
15-20	4
20-30	4
30-40	8
40-50	8
70	1
Mm. Drop in Diastolic Blood Pressure	Number of Patients
0-5	3
5-10	9
10-20	13
20-30	7
48	1

The average drop in both diastolic and systolic readings was much greater when the blood concentrations were higher. Table 5 will bear this out. These figures represent the lowest blood pressure readings recorded on each patient with corresponding blood levels. From two to four readings were obtained of the blood pressure at these low levels.

Table 5. *Blood Pressures and Concentrations*

Average Blood Pressure Before Treatment	Lowest Blood Pressure During Treatment	Concentrations Taken at Time of Lowest Blood Pressure Reading (Per Cent)
198/101	124/76	20.6 mgs.
222/113	152/80	17.8 mgs.
197/96	150/82	15.7 mgs.
213/132	170/104	13.6 mgs.
224/138	200/80	13.3 mgs.
203/115	148/84	13.0 mgs.
199/119	152/94	12.4 mgs.
300+/200	240/156	12.1 mgs.
194/102	150/90	11.6 mgs.
201/102	144/78	11.1 mgs.
242/142	182/128	10.6 mgs.
207/107	136/84	10.6 mgs.
231/145	156/86	10.3 mgs.
216/65	180/48	10.2 mgs.
212/126	174/106	10.2 mgs.
187/99	150/84	10.1 mgs.
240/116	154/58	8.7 mgs.
199/103	150/88	8.6 mgs.
212/107	146/60	8.3 mgs.
182/118	160/106	7.5 mgs.
210/108	134/78	7.3 mgs.
231/100	182/90	7.2 mgs.
202/111	188/110	7.2 mgs.
238/122	180/84	7.0 mgs.
186/108	140/90	6.5 mgs.
211/103	190/94	5.6 mgs.
217/109	194/96	5.0 mgs.
250/150	220/130	4.9 mgs.
200/106	168/90	4.8 mgs.
199/109	158/88	4.6 mgs.
218/121	174/110	4.3 mgs.
231/139	200/140	3.5 mgs.
185/95	140/78	

Each patient was questioned concerning symptoms before, during and after treatment. There were thirteen patients who had no symptoms of hypertension and twenty patients with symptoms.

Symptomatic relief was designated as being "none," "fair" and "good" depending on the complaints registered by the patients. Symptomatic improvements occurred in a total of seventeen patients. Ten, or 50 per cent, were considered as having obtained good relief; seven, or 35 per cent, as fair, and three, or 15 per cent, as none.

In a total of thirty-three patients there were no untoward reactions in twenty, or 60 per cent. Four had definite symptoms of intoxication: weakness, sleepiness and hallucinations. The concentrations in these four cases were 10.3, 13.5, 21.7 and 20.7 at the time the symptoms of intoxication were present. Two of these patients developed toxic symptoms on concentrations which usually are thought safe. The symptoms may have been due to the fact that these patients had a drop of 75 mm. Hg. in the systolic blood pressure. Nausea and vomiting occurred in five but in only one did the drug have to be discontinued for this reason. Drowsiness and sleepiness occurred in four. Two complained of weakness and maculopapular rash developed in one. Three of the patients complained of being able to taste the "medicine" all the time. Several complained of some loss of appetite.

DISCUSSION

In view of these results I believe that sulfocyanate (thiocyanate) is a valuable adjunct in the treatment of "essential" hypertension. Certain facts concerning the figures presented must be taken into consideration.

The difficulties in arriving at an objective value for blood pressure are well known. The psychogenic factors in the relief of symptoms must be considered. Each patient was told much concerning the possibilities of this type of treatment; what could and could not be expected. In order definitely to rule out a psychogenic factor a period of treatment with the drug should be followed by a period of treatment with a placebo. Just what part psychogenic factors played in this series cannot be stated definitely.

The possible toxic effects of this drug must be realized thoroughly before it is used in any particular case. Intelligent cooperation of the patient is essential. A check on blood concentrations is very important. It must be kept in mind that a sufficient drop in the blood pressure to relieve minor symptoms of hypertension can be obtained with levels between 8 and 12 mg. per cent and even as low as 4 to 5 mg. per cent. Blood levels do rise or remain the same for several days and even longer after the dosage has been decreased or the drug discontinued. With the first signs of toxicity the drug should be discontinued. Difficulty may be encountered in distinguishing between symptoms due to the toxic action of the drug and those due to excessive fall in blood pressure.

When continued over a long period of time sulfocyanate (thiocyanate) produces symptoms not un-

like those associated with long continued hypertension. Patients should not be kept on the drug for periods of longer than three or four months allowing one or two months rest period between such courses. Dermatitis associated with this drug is rare but cases of exfoliative dermatitis have been described by several investigators.

SUMMARY

1. Thirty-three patients with essential hypertension were treated with sodium sulfocyanate (thiocyanate).

2. Relief of symptoms of hypertension was regarded as good in 50 per cent of the cases, fair in 35 per cent, and negligible in 15 per cent. A total of 85 per cent of the patients treated obtained some relief from symptoms.

3. Sixteen of the thirty-three patients showed an average drop of from 30 to 50 mm. Hg. in systolic blood pressure and twenty-one had a drop of from 10 to 30 mm. Hg. in diastolic blood pressure.

4. Patients beyond 50 years of age tolerated the drug and responded as well as younger patients.

5. Four cases of intoxication were encountered with symptoms of sleepiness, weakness and hallucinations.

6. Other reactions such as nausea and vomiting, drowsiness, weakness, loss of appetite and maculopapular dermatitis were seen.

7. The fall in blood pressure was found to be roughly proportional to the concentration of the drug in the blood.

8. It is recommended that the blood concentration of the drug be determined at least once a week.

9. Dosages of the drug needed to maintain adequate blood levels vary considerably with the kidney function but 2.5 grs. twice a day as a start was found to be satisfactory. Later the dosages must be adjusted according to the blood concentrations.

St. Louis City Hospital.

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IMPLANTING SULFONAMIDE POWDER IN CLEAN OPERATIVE WOUNDS

In view of the favorable results obtained in more than 600 consecutive cases which he reports in *The Journal of the American Medical Association* for August 7, J. Albert Key, M.D., St. Louis, says, "I believe that the practice of implanting sulfonamide powder in clean operative wounds should become routine in all civilian and military hospitals. This is especially true at this time when, owing to the emergency resulting from the war, so much surgery must be done under abnormal conditions and the incidence of operative infection may be expected to be unusually high."

CASE REPORTS OF BARNES HOSPITAL

CLINICAL AND POSTMORTEM RECORDS USED IN
WEEKLY CLINICOPATHOLOGIC CONFERENCES
AT BARNES HOSPITAL, ST. LOUIS

W. BARRY WOOD, JR., M.D., and ROBERT
A. MOORE, M.D., Editors

CASE 25

PRESENTATION OF CASE

A 67 year old night watchman entered Barnes Hospital on June 6 and was discharged on June 18, 1941.

Chief Complaints.—Abdominal pain; swollen, discolored left arm.

Family History.—Father died at the age of 40 of cause unknown. Mother died following a severe injury. Two sisters died from heat prostration.

Social History.—The patient was born in St. Louis and had always lived there. He had a partial primary school education. There is a history of considerable alcoholic excess during his early adult life. His previous work history was not stated. During his later years he was employed as a night watchman. His diet appeared adequate.

Past History.—Other than pneumonia at the age of 60, no serious illnesses were recorded.

Systemic History.—The patient's teeth had been neglected. There was no other notation of abnormal findings.

Present Illness.—About eight weeks previous to admission, the patient suddenly experienced sharp pain across his abdomen. He described it as a "gnawing, twisting, sticking pain, as if at times something were being torn loose." The pain was not related to meals. It had been more or less constant since its onset although more severe at times. On such occasions there had been some nausea but no vomiting. His stools, which had always been regular, became rather frequent with three or four movements a day but there had been no frank diarrhea or change in the character of the stools. His appetite failed almost completely and he lost some thirty pounds in weight during the course of his illness. This induced considerable weakness. On April 8, he sought medical attention at the Out-patient Department of the Barnard Free Skin and Cancer Hospital. Roentgenographic examination of the gastrointestinal tract was made and the only abnormal finding was a "cascade type" stomach. An intravenous pyelogram showed the kidneys to be normal. He was then referred to the Washington University Clinics. On the morning of his admission there, while bathing, he noticed that his left arm had become painful, swollen and discolored. He was referred immediately to the hospital.

Physical Examination.—Temperature was 37.6 C., respiration 20, pulse 70, blood pressure, right 114/70, left 104/70. The patient was somewhat undernourished. His left arm and forearm and hand were discolored and had a speckled blue appearance. This extremity felt colder to touch than the opposite

one. There was pitting edema of the hand. In the left midaxilla and posterior axillary region was an edematous pouch of tissue not present on the right. This was about the size of half a grapefruit and was slightly tender. The left pupil was distinctly smaller than the right but both reacted readily to light and accommodation. The palpebral fissure on the left was questionably smaller than the right. There were many carious teeth with marked pyorrhea. There were a few crackles in the upper hilar areas bilaterally with diminished breath sounds over the left upper half of the chest posteriorly. Spoken and whispered voice were unchanged. No abnormal findings were detected in the heart. The abdomen was soft and the liver was felt 2 centimeters below the right costal margin in the midclavicular line. A questionable mass in the left upper quadrant close to the rectus muscle was felt by one observer. The abdomen was otherwise normal. The prostate was enlarged to about twice its normal size, was tender, firm, but no nodules were felt. The lower extremities were cold but pulsations were palpated readily in both of the posterior tibial and dorsalis pedis arteries.

Laboratory Findings.—Blood count: red blood cells, 4,700,000, hemoglobin 16.6 grams, white blood cells 15,200, differential count: basophils 1 per cent, eosinophils 1 per cent, "stab" forms 1 per cent, segmented forms 86 per cent, lymphocytes 6 per cent, monocytes 5 per cent. Urinalysis: acid, albumin 1 plus, sugar negative, microscopic, from 20 to 30 white blood cells per high power field and a few hyaline and granular casts. Stool: guaiac negative, no parasites found. Kahn test was negative. Nonprotein nitrogen was 29 mg. per cent. Roentgenograms of the chest showed the lung markings to be coarse but the parenchyma was clear. Cardiac silhouette was within normal limits. There was beginning lengthening of the aorta. Films of the lower cervical and upper dorsal spine revealed hypertrophic spurring about the bodies of the cervical and dorsal vertebrae. The diagnosis was hypertrophic osteo-arthritis. A gastrointestinal roentgen ray series revealed hypermotility of the colon with irritable type of haustrations. The diagnosis was irritable colon. On oral cholecystograms, no visualization of the gallbladder appeared throughout the series. An electrocardiogram revealed low voltage, slight slurring of the QRS complex in lead II, slightly depressed RST segment in lead II, iso-electric T waves in lead I, which were diaphasic in lead II, iso-electric in lead III, and low upright in IVF. The interpretation was myocardial damage.

Course in Hospital.—On the day following admission dilated veins appeared on the left chest wall anteriorly extending to the shoulder and out into the supraclavicular fossa. At the latter site a firm, palpable cord which was not tender was felt. The mottled cyanosis of the left extremity noted on admission became much deeper and extended to the shoulder over the left anterior chest wall where telangiectases were observed. The follow-

ing day these had increased and the neck veins on the left were observed to be distended with some cyanosis of the surrounding tissue. Venous pressure on that day was 90 millimeters in the right arm and 325 mm. in the left. The blood pressure was 114/70 on the right and 104/70 on the left. During the next few days there was increasing fullness in the left supraclavicular fossa and the cord previously felt there enlarged in size and was considered to be a thrombosed subclavian vein. The left pupil remained smaller than the right. On rest, elevation of the left arm and external heat, the cyanosis and swelling of the left upper extremity subsided considerably. During the patient's hospital stay he had a persistent diarrhea with as many as nine stools a day. At no time were blood or pathologic organisms found in them. There was a persistent mild elevation of temperature with a daily rise to about 38 C. The patient was discharged with a final diagnosis of thrombosis of the left subclavian vein of undetermined etiology and irritable colon.

Second Hospital Admission.—The patient reentered the hospital on July 7 and died on July 11, 1941.

Since discharge from the hospital, the patient had remained at home suffering from abdominal pain identical to his original complaint. This gradually increased in severity. In addition, his abdomen gradually became "bloated" with a feeling of fullness which was aggravated by taking food. His appetite diminished so that he took only a little milk and water. He became so weak that his wife had to feed him. She noticed four days before admission that his skin had turned yellow overnight and she noted further that the patient's urine had become dark and diminished in quantity. There were no further complaints concerning his arm.

Physical Examination.—Temperature was 38.6 C., pulse 84, respiration 24, blood pressure right, 85/70. The patient's appearance had changed strikingly since the last admission. He was jaundiced, markedly cachectic, dehydrated and extremely weak. The left hand was puffy with evidence of increased venous pressure. The eyes showed the pupillary inequality as before. The carious teeth and pyorrhea remained unchanged. The cord previously palpated in the left supraclavicular space was still present. There was some venous engorgement over the left pectoral area. Throughout the right lower lung field there were slight dulness and occasional respiratory crackles. The heart remained unchanged. The abdomen was distended with bulging of the flanks. A definite fluid wave and shifting dulness were elicited. The liver percussed and was questionably felt three finger breaths below the right costal margin and its surface was somewhat nodular. No other organs or masses were felt. There was marked pitting edema over the sacrum as well as of the feet. The prostate remained enlarged and tender. The reflexes were physiologic.

Laboratory Findings.—Blood count: red blood

cells 4,200,000, hemoglobin 74.5 per cent, white cells 16,200, differential count: basophils 1 per cent, eosinophils 2 per cent, "stab" forms 3 per cent, segmented forms 86 per cent, lymphocytes 5 per cent, monocytes 3 per cent. Urinalysis: specific gravity 1.020, albumin 1 plus, sugar negative, acetone 1 plus, bile 1 plus, microscopic negative. Blood chemistry: nonprotein nitrogen 45 mg. per cent, amylase 12 units per cent, total protein 5.0 grams, albumin 2.3, globulin 2.7, icteric index 40. Hippuric acid test showed 32 per cent excretion of sodium benzoate.

Course in Hospital.—The day following admission a paracentesis of the abdomen was performed and 4,000 cc. of yellow-brown fluid were removed. Specific gravity was 1.007, and cell count was 3,000 red blood cells and 100 lymphocytes per cu. mm. On section of the sediment no tumor cells were identified. A note was made, however, that although the presence of acinar-like structures and slight variation in cellular detail was highly suggestive of malignancy, definite proof was not present. A roentgenogram of the chest showed no change in appearance of the cardiac shadow. A marked increase in the hilar shadows on the right side had developed and there was an extensive amount of pulmonary infiltration occupying the lower and outer portion of the right lung. The right leaf of the diaphragm was irregular and the costophrenic angle obscured, presumably by a small collection of fluid. The left lung remained clear with the exception of some coarsened lung markings. The diagnosis was pulmonary infiltration and fibrosis of the right lung with pleurisy at the right base and questionable fluid in the right pleural cavity.

During his hospital stay of four days there was some elevation of temperature twenty-four hours before death. The patient's course was rapidly downhill. He became moribund and expired.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: In this case the laboratory findings are singularly unrevealing. We shall have to rely on symptoms and physical signs and the course of the illness to arrive at a diagnosis. There were two groups of symptoms and signs: one referable to the abdomen, and one referable to the left upper extremity. Perhaps it would be well to begin with the first group, those referable to the abdomen. It might be useful if we were to consider these as they occurred sequentially. The first thing the patient complained of was abdominal pain, soon followed by diarrhea and anorexia—all previous to his initial admission. On physical examination there was felt a not very large liver; it was palpated 2 cm. below the right costal margin. One observer, the intern who examined him, thought that he felt a mass in the left upper quadrant. When the patient left the hospital these symptoms persisted, and on his second admission he had, in addition, jaundice and ascites. The only laboratory findings that seem to have some significance are bile in the urine and some of the liver function tests. He had a colitis.

In previous roentgen ray examinations at Barnard Hospital, the only finding had been a cascade type of stomach. What then may give rise to this chain of symptoms, with the addition of loss of weight, cachexia and death within a few months? Are there any suggestions?

DR. PAUL HAGEMAN: This man's symptoms certainly point to the abdomen. The negative gastro-intestinal series must be taken into consideration; yet he certainly had a disturbance of the gastro-intestinal tract. It makes one wonder about the appendages of the gastrointestinal tract. Perhaps his intestinal symptoms were a reflection of the disturbance in one of these.

DR. ALEXANDER: Have you any specific suggestion?

DR. HAGEMAN: I suggest that the pancreas be considered.

DR. ALEXANDER: Because of what particular symptoms?

DR. HAGEMAN: Because of the increased intestinal motility and the pain.

DR. ALEXANDER: This pain was described as constant. We have no information about its location. Its radiation was not mentioned either. Some lesions of the pancreas do produce a persistent pain. What lesion would you consider the most likely?

DR. HAGEMAN: The man did develop some evidence of hepatic involvement, which makes one think of carcinoma.

DR. ALEXANDER: The pain would be in keeping with carcinoma of the pancreas, as would the diarrhea, anorexia, enlarged liver and the mass in the left upper quadrant. What about the jaundice?

DR. HAGEMAN: That would depend on the site of the neoplasm in the pancreas, or the extent of involvement of the liver.

DR. ALEXANDER: If this be carcinoma of the pancreas, would you have any intimation of its site from the chain of symptoms alone?

DR. HAGEMAN: The fact that jaundice developed rather late suggests that it is not in the head.

DR. ALEXANDER: Is there anything else that might give a clue to the site?

DR. W. BARRY WOOD: The presence of ascites is in favor of its being in the body or tail.

DR. ALEXANDER: Why?

DR. WOOD: Carcinomas of the head do not often metastasize to the peritoneum.

DR. ALEXANDER: Carcinomas of the body and tail of the pancreas metastasize much more widely and massively than carcinomas of the head. What about the abdominal pain? Would that localize this lesion?

DR. ALBERT TAUSSIG: Pain with carcinoma of the body and tail is usually much more intense than that of the head.

DR. ALEXANDER: And much more constant. Why?

DR. ALBERT TAUSSIG: It is speculated that it may press on the solar plexus.

DR. ALEXANDER: The body of the pancreas lies over the celiac axis. One explanation of the pain

is that carcinoma of the pancreas tends to infiltrate the nerve sheaths. This is a very old explanation of the cause of pain. Statistically this assumes some importance in a differential diagnosis. Almost 100 per cent of cases of carcinoma of the body or tail are ushered in by pain. That is not true of carcinoma originating in the head of the pancreas, which is some distance from the celiac axis. What is the most frequent presenting symptom of carcinoma of the head?

DR. HAROLD SCHEFF: Jaundice.

DR. ALEXANDER: Jaundice is statistically one of the earliest manifestations of carcinoma of the head, and pain is a constant manifestation of carcinoma of the body. Carcinoma of the body eventually may involve the whole pancreas, and finally the head and constrict the common duct, to give jaundice. From these indications one might tentatively conclude that if this be a carcinoma of the pancreas, it began in the body of the pancreas. Later it may have involved the head or the liver. Dr. Scheff, what about diarrhea as a symptom of carcinoma of the pancreas?

DR. SCHEFF: I do not believe it is associated with carcinoma of the head, but it is found with carcinoma of the body or tail of the pancreas.

DR. ALEXANDER: How frequently?

DR. SCHEFF: I cannot give you the exact figures, but rather frequently.

DR. ALEXANDER: What about the character of the stools?

DR. SCHEFF: They are usually fatty stools, but not necessarily so.

DR. ALEXANDER: I think we might take exception to that statement. I believe that unless the pancreas is almost totally destroyed, the steapsinogen of the pancreatic enzyme is not interfered with. Diarrhea is occasionally associated (in about 30 per cent of cases, I believe), but it is unusual to have changes in the character of the stool. I believe I recall a maxim to the effect that in any middle aged or elderly person who has diarrhea of unexplained origin, carcinoma of the pancreas should be suspected. The jaundice has been mentioned. The ascites may be caused by involvement of the peritoneal surface.

DR. SCHEFF: There might be obstruction of the portal vein—metastatic glands—which also would cause jaundice, without involvement of the head of the pancreas.

DR. ALEXANDER: Which glands?

DR. SCHEFF: The regional nodes.

DR. ALEXANDER: There is a great deal in favor of carcinoma of the pancreas. Are we willing to accept this diagnosis? Might this be cirrhosis of the liver? Why not?

DR. BARRETT TAUSSIG: Abdominal pain seldom occurs with cirrhosis of the liver. It may occur, but usually only in very severe cases.

DR. ALEXANDER: Except for the abdominal pain, it is not out of keeping, then. Are there other sug-

gestions insofar as a tentative diagnosis of carcinoma of the pancreas is concerned?

DR. JULIUS ELSON: Carcinoma of the liver might possibly explain the symptoms, might it not?

DR. ALEXANDER: Do you mean primary cell carcinoma of the liver or that arising in the biliary ducts?

DR. ELSON: Certainly the carcinoma involves the biliary tract, whether it arises there originally or metastasizes.

DR. ALEXANDER: Is it not true that primary cell carcinoma of the liver rarely metastasizes? The fact that this man had jaundice and lesions in the lung would seem to identify the lesion, if it is carcinoma of the liver, as carcinoma arising in the biliary ducts. What about pain? Is that associated?

DR. ELSON: Yes, carcinoma involving the liver produces pain.

DR. ALEXANDER: If the capsule of the liver is involved there is pain. But would not this particular kind of pain—constant, gnawing, twisting—be rather unusual for carcinoma of the liver?

DR. SCHEFF: Very.

DR. ALEXANDER: Are there further comments before we proceed?

DR. BARRETT TAUSSIG: This could be a stone in the gallbladder and carcinoma of the gallbladder. It is not consistent with the diarrhea but it would explain the pain.

DR. ALEXANDER: That is an interesting suggestion. This might be the pain of a gall stone complicated by carcinoma of the biliary system.

DR. SCHEFF: Would not that give a different type of pain?

DR. ALEXANDER: I presume it would not be a constant pain. But we must consider all possibilities.

DR. KANTER: Could acute pancreatitis be a possibility?

DR. ALEXANDER: I do not believe so. You are evidently thinking of the pain. Acute pancreatitis would hardly cause all these other symptoms or go on for such a length of time.

DR. SCHEFF: It may persist for forty days.

DR. ALEXANDER: Does it produce ascites and jaundice?

DR. SCHEFF: If it goes on for forty days, yes.

DR. ALEXANDER: Are there further suggestions?

DR. WOOD: Could the portal vein be involved by the tumor itself rather than by metastases?

DR. ALEXANDER: The portal vein may be involved by the tumor. It may be thrombosed to give rise to the ascites. If there is ascites we may fairly assume portal obstruction or involvement of the peritoneum.

DR. WOOD: Is not the portal obstruction usually caused by direct invasion of the splenic vein?

DR. ALEXANDER: Yes, but of course the thrombus must get beyond the splenic vein as a migrating thrombus in order to cause portal obstruction and ascites.

DR. CARL MOORE: Could this pain be caused by invasion of the lumbar vertebra, Dr. Moore?

DR. SHERWOOD MOORE: Yes.

DR. ALEXANDER: Secondary invasion, yes. The pain of carcinoma of the pancreas frequently radiates to the back so it is possible that such pain may be caused by involvement of the vertebra.

The second manifestation was evidently a thrombophlebitis of the left subclavian vein. His arm became blue and swollen and the discoloration increased so that at least his subclavian vein and the veins of his arm were involved. He also had great edema in his left axilla. What veins would that involve?

DR. WOOD: The long thoracic vein.

DR. ALEXANDER: The axillary vein with its branch of the long thoracic vein. He had edema and discoloration of the skin of his neck. What vein would that involve? Perhaps some student can answer.

STUDENT: The external jugular.

DR. ALEXANDER: Yes, because that enters into the subclavian vein. This man also had a small pupil, a small palpebral fissure and a suggestion of Horner's syndrome. What vein? The internal jugular which with the subclavian forms the left innominate vein. There must have been a migrating thrombus involving the whole venous system of the left upper extremity and one may find it in the left innominate and possibly in the superior vena cava. Is there any relation between the thrombophlebitis and carcinoma of the pancreas?

DR. LLEWELLYN SALE: Yes, there is. The association of phlebothrombosis in carcinoma of the body and tail of the pancreas occurs according to one reference in 56 per cent of cases.

DR. ALEXANDER: What is that reference?

DR. SALE: Sproul, *American Journal of Cancer*, December 1933. He says it occurs in 7 or 8 per cent of cases of carcinoma of the head, and in over half the cases of carcinoma of the body and tail.

DR. ALEXANDER: That is a very important reference. If one examines the statistical series of carcinoma of the pancreas, one finds that thrombophlebitis was frequently not even looked for; and the incidence in other series is very much smaller—5 per cent or something like that. This is certainly a very much higher incidence, probably because it was looked for.

DR. SALE: I think the frequency with which we have seen this complicating feature of carcinoma of the body or tail, taking into consideration the relative infrequency of the lesion, must be about that high.

DR. ALEXANDER: This is a very curious association and we shall ask Dr. Moore to discuss it. It is interesting that this association of venous thrombosis with carcinoma of the pancreas has been known for some years and yet the references in these statistical series have with one exception overlooked this fact. The original paper appeared in the *Munchener Medizinische Wochenschrift* in 1932, entitled "Peripheral Venous Thrombosis: A Heretofore Unrecognized Finding in Carcinoma of

the Pancreas." The evidence seems strong that this chain of signs and symptoms conforms very well with carcinoma of the pancreas and, if this otherwise unexplained migrating thrombus occurs in half such cases, we are probably justified in making this diagnosis. If abdominal pain ushers in almost all cases of carcinoma of the body or tail and, if thrombophlebitis occurs much more frequently in carcinoma of the body or tail, we may go so far as to identify it as carcinoma of the body or tail of the pancreas. Most carcinomata of the pancreas are the columnar or cylindroid types, but there are acinar types. I bring this up because when the sediment of the ascitic fluid was examined, some mention was made of acinar cells. What did it say?

DR. ROBERT MOORE: It merely mentioned the acinar arrangement of the cells.

DR. ALEXANDER: It probably has no relevance. Are there other comments?

DR. EDWARD H. REINHARD: I think Dr. Dan Myers made an interesting suggestion on the first admission. Thrombophlebitis of the mesenteric vein might cause pain. What would you think of that? Subsequent course of events made it unlikely, but would it give that kind of pain?

DR. ALEXANDER: I do not know about pain of a migrating thrombus of the mesentery. It is a very good probability that the ascites was not caused merely by lymph nodes blocking the portal vein. This might not be metastasis but migrating thrombus in the portal vein.

DR. BARRETT TAUSSIG: In view of the widespread thrombosis, would you expect a chylous ascites?

DR. ALEXANDER: Why?

DR. TAUSSIG: Because of obstruction of the thoracic duct.

DR. ALEXANDER: That is a very interesting point because the thoracic duct enters the left subclavian vein, which was very markedly involved, and the inference is that if the lymph could not enter the left subclavian vein, there might be lymph obstruction. It would not have to be reflected in the chest. I think it is an excellent suggestion.

DR. ELSON: Although the pain in this patient is more characteristic of pancreatic involvement, one does not have to presuppose pancreatic involvement to explain thrombosis, because reports of extensive liver involvement associated with thrombosis are seen, explained as a deficiency of heparin.

DR. ALEXANDER: You feel, then, that it well may be a carcinoma of the liver which has destroyed a great deal of liver tissue and impaired its function, so that heparin could not be adequately formed, and thrombosis resulted. I am not acquainted with that syndrome.

DR. WOOD: Do you believe that there were metastases in the lung?

DR. SHERWOOD MOORE: Those findings in the roentgenogram could be metastases, but the changes observed do not have the characteristic appearance of them.

DR. ALEXANDER: What do they have the characteristic appearance of?

DR. MOORE: Nothing in particular. Anything which will diminish the volume of air might cause this picture.

DR. ALEXANDER: A slowly growing thrombus?

DR. MOORE: That is just as good an idea as any to explain these changes.

DR. ALEXANDER: Might there be a little fluid?

DR. MOORE: Yes.

DR. ALEXANDER'S DIAGNOSIS

Carcinoma of the body or tail of the pancreas.

Thrombosis of the left subclavian vein involving the orifices of the jugular veins.

DIAGNOSES BY STUDENTS

Carcinoma of the pancreas (unqualified)	10
Carcinoma of the body or tail of the pancreas	9
Carcinoma of the head of the pancreas	3
Carcinoma of the liver	10
Carcinoma of the stomach	5
Carcinoma of other organs	10
Cirrhosis of the liver	3
Cholelithiasis	1
Chronic pancreatitis	1
Lymphosarcoma	1

DIAGNOSES BY FACULTY

Carcinoma of the pancreas (unqualified)	7
Carcinoma of the body or tail of the pancreas	5
Carcinoma of other organs	3
Acute pancreatitis	1
Lymphosarcoma	1

ANATOMIC DIAGNOSIS

Carcinoma of the anterior part of the body of the pancreas.

Atrophy and fibrosis of the tail of the pancreas.

Direct extension of carcinoma to the gastro-hepatic omentum with compression of the common bile duct.

Dilation of the extrahepatic bile ducts.

Obstructive biliary cirrhosis.

Thrombosis of the portal and splenic veins.

Thrombosis of the left subclavian veins.

Thrombi in the pulmonary arteries.

Infarcts of the lung.

Metastases of the carcinoma to the regional lymph nodes, liver, lungs, adrenals and mesentery of the ileum.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: The carcinoma of the pancreas was an adenocarcinoma with a minimal amount of mucus in the neoplastic cells. By direct extension the middle two thirds of the common bile duct was involved and compressed by the tumor. This undoubtedly explains the late appearance of jaundice.

The infarcts of the lungs were large, while the metastatic nodules did not exceed a few millimeters in diameter. It is probable that the areas of radio-opacity were produced by the infarcts and not by the tumor.

The thrombus in the subclavian vein did not involve the orifice of the jugular veins but we cannot exclude the existence of thrombi in other parts of these veins since they were not examined. The thrombi in both the subclavian and portal veins were partially organized.

The ascites is best explained by the occlusion of the portal vein with a thrombus, although there were metastases to the mesentery of the ileum and there was some compression of the portal vein by surrounding neoplastic tissue.

The association of carcinoma of the body or tail of the pancreas with multiple venous thrombi has been analyzed statistically by Sproul (*Am. J. Cancer* 34:566-585, 1938). He found that about 35 per cent of all cases of carcinoma of the body or tail of the pancreas at the Presbyterian Hospital in New York were associated with multiple venous thrombi. Dr. William Kenney in this Department became interested in this problem last year and found that of twenty-four cases of carcinoma of the body or tail of the pancreas among the 10,000 autopsies in the files of Washington University, 35 per cent had thrombi in two or more veins. No other disease of the pancreas shows an incidence of thrombosis approaching that of carcinoma of the pancreas. Carcinoma of the head of the pancreas is not related to venous thrombosis. Histologic study of the tumors revealed that all contain demonstrable mucin in the neoplastic cells when there is venous thrombosis. No satisfactory explanation has yet been offered for this phenomenon.

CASE 26

PRESENTATION OF CASE

A 28 year old married housewife entered Barnes Hospital on April 20 and died on May 20, 1943.

Chief Complaint.—Swelling of the legs, abdomen and face.

Family History.—The patient's mother committed suicide when 39 years old. She had been "nervous" as were other members of her family.

Social History.—The patient was born in Illinois, had a high school education, was married at 18 and thereafter was a housewife. She had never been pregnant. She used no tobacco or alcohol. Her home was on a farm and her diet was entirely adequate.

Past History.—The patient had childhood diseases including a light attack of scarlet fever. When very young she had several attacks of bronchitis.

Systemic Review.—There was some tendency to upper respiratory infection but sore throats had been very infrequent. She had not menstruated for five years previous to the present illness with one exception, when she was given an injection to induce menstrual flow. Her average weight was 225 pounds.

Present Illness.—On April 12, 1942, the patient developed "flu." At the time she had had a slight head cold, generalized aching in the muscles and considerable nausea and vomiting. She remained in bed two weeks, following which her feet began

to swell and she became so tight about the waist that she had to sit up to breathe. At the onset of swelling, she developed a severe headache. The patient consulted a physician who found that a urine specimen contained much albumin with casts and blood. He prescribed medication, including 1½ grains of thyroid, at first two and then three times a day. In addition, she took a saline cathartic every other day and eliminated meat, eggs and salt from her diet. She remained in bed and on this regimen lost 37 pounds in the following two weeks. On a more liberal diet, she continued to lose weight gradually and in June 1942 she was told that she had recovered completely. She was then given 10 grains of thyroid a day and, except for some palpitation, felt very well until February 9, 1943. On that date she developed a sore throat and stated that her tonsils contained a good deal of pus. She recovered from this under local applications in about two weeks but because of rapid heart beat she was given green drops. At that time her weight was 191 pounds. Shortly after this, her urine again showed albumin and she again was placed on the same regimen as on her previous attack. She soon began to vomit after each meal. While under this treatment she became noticeably swollen about the lower extremities, the waist and the face, and she entered Barnes Hospital for investigation. During this second attack there had been no disturbance of vision, no dizziness and no headache.

Physical Examination.—Temperature was 36 C., pulse 88, respiration 18, blood pressure 120/88. The patient was a very obese woman with puffiness about the eyes. The sclerae seemed slightly yellow. The retinae appeared to be normal. There were no signs of inflammation in the nose and throat. Lungs showed absent tactile and vocal fremitus posteriorly on the right from the level of the third dorsal spine to the base. Over this area were high pitched whispered and spoken voice sounds. No rales were heard. The left chest was clear. The heart was not enlarged apparently, the rhythm was irregular with frequent extrasystoles and a suggestion of gallop. The rate was 88 and no murmurs or accentuations were heard. The abdomen was very large and no details of its content could be elicited. Pelvic examination was normal. There was marked edema of the lower extremities extending to the sacrum.

Laboratory Findings.—Blood count: red blood cells 6,510,000, hemoglobin 20.3 grams (131 per cent), white blood cells 6,900, differential count: basophils 1 per cent, eosinophils 1 per cent, "stab" forms 2 per cent, segmented forms 54 per cent, lymphocytes 40 per cent, monocytes 2 per cent. Urinalysis: specific gravity 1.017, albumin 4 plus, sugar negative; microscopic: a few finely granular casts and a moderate number of red blood cells. Blood Kahn test was negative. Blood chemistry: nonprotein nitrogen 45 mg. per cent (May 4, 1943), sugar 77 mg. per cent, total proteins 5.3 grams per cent, albumin 3.2, globulin 2.1. Electrocardiogram: voltage low on all leads. T waves low upright

in lead one; interpretation, myocardial damage. Roentgenogram of the chest: the heart was enlarged. There were numerous pleuropericardial adhesions along the left border of the heart. Throughout each lung there was a large amount of infiltration which on the left paralleled the lateral chest wall and represented fluid in the pleural cavity. The right chest was completely opaque below the level of the third rib. Diagnosis: Cardiac enlargement, pleuropericardial adhesions, fluid in both pleural cavities, ? pneumonia, right lower lung.

Course in Hospital.—Shortly after admission 900 cc. of yellow, clear, sterile fluid with a specific gravity of 1.012, which clotted on cooling, were drawn from the right pleural cavity. Following this, fluoroscopy showed some enlargement of the heart to both the left and the right but it was noted that there was no indication of much pericardial effusion. The patient was digitalized. There was but little resulting diuresis. A second electrocardiogram showed a prolonged P-R interval of .34 which was considered a possible effect of digitalis. About two weeks after admission, the patient developed some pain in the left chest with cough and the production of a small amount of bloody sputum. No physical signs were elicited to account for this. Two days later the temperature suddenly rose to 38.7 C. and remained elevated for three days, from May 5 to May 8. Fluid apparently had accumulated slowly in both sides of the chest, more in the left. On May 9, the patient expectorated a few cubic centimeters of both bright and dark blood. Her blood count on that date was: red blood cells 5,700,000, hemoglobin 16.4 grams, white blood cells 13,450 with 31 "stab" and 56 segmented forms. On May 12 pain in the left chest returned and the patient became decidedly dyspneic. No findings other than fluid were elicited. A thoracentesis was done on the left and 1,500 cc. of serosanguinous fluid were withdrawn. The dyspnea was somewhat relieved. On that day the blood nonprotein nitrogen had risen to 56 mg. per cent. The temperature again began to rise slowly and steadily, and continued to do so until death. On May 13 the left pleural cavity was again entered and 1,500 cc. of blood-tinged fluid were removed. This fluid had a yellowish, bile-like color of the foam. It was felt that it had come from the pleural cavity and that the pericardial cavity had not been entered. On May 15, because of dullness of the left chest, the pleural cavity again was entered but very little fluid was obtained. A pericardial effusion was then considered to be present. On May 17, 225 cc. of bloody icteric pleural effusion were removed from the left pleural cavity. Thereafter there was some diminution of dullness. The blood count on that day was: 22,000 leukocytes, with 27 per cent "stab" and 63 per cent segmented forms. The icteric index was 75. On May 17 fluoroscopy revealed a small amount of fluid in each pleural cavity and the pericardium seemed to be bulging with poor pulsation of the heart. Sputum on that date revealed pneumococci on mouse inoculation

but did not type directly. On May 17 because of elevated fever and leukocytosis, sulfamerazine was given in large doses and two days later a blood level of 14.7 mg. was secured. On May 18 the patient became delirious. Respirations were 44, pulse 128, and blood pressure 118/90. Bronchial breathing was heard on the left side. The blood nonprotein nitrogen had risen to 85 mg. per cent. Blood culture on May 19 showed hemolytic staphylococcus aureus in one broth flask. The patient's delirium continued; the temperature rose to 40.7 C. and she died.

Many urine specimens were taken throughout her stay; all contained albumin, usually 3 plus, casts were found frequently and red blood cells from time to time.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: This patient's symptoms were at first referable to her nephritis in April 1942. There was a recurrence of the symptoms in February 1943. Later there were complications referable to the chest. It might be well to consider the nephritis first. Dr. Bulger, what kind of nephritis would you presume this to be?

DR. HAROLD BULGER: The history sounds fairly typical of chronic or subacute glomerulonephritis, but there are two facts that are strongly against such a diagnosis. She had no hypertension and no anemia, which would certainly be expected when her nonprotein nitrogen was elevated. Because of the hematuria and elevated nonprotein nitrogen, I do not think it is a so-called nephrosis. Focal infarcts, such as might accompany bacterial endocarditis, should be considered.

DR. ALEXANDER: Might the first attack of nephritis have been an acute nephritis? She had always been well except for an attack of scarlet fever some years before. Presumably she recovered from the first attack of nephritis in June 1942. The next February tonsillitis and signs of nephritis developed. Do you think she had two attacks of acute nephritis, or that her kidneys were damaged by the first attack and the second attack was a recrudescence?

DR. BULGER: The latter assumption is reasonable.

DR. ALEXANDER: She had edema, and yet her proteins are recorded as 5.3 gm. per cent, with a normal ratio. Is not the colloidal osmotic pressure sufficiently high to prevent edema?

DR. BULGER: Yes.

DR. ALEXANDER: Do you attribute her edema to her nephritis?

DR. BULGER: There was no mention as to whether or not this patient was dyspneic or whether her pulse was small.

DR. KEITH WILSON: She could not lie down. She was fairly orthopneic at the time I saw her, and because of the findings we thought she had some heart failure to account for the edema. I thought her pulse was rather fast, and her pulse pressure was only about 10 on the day I saw her. We undertook a fluoroscopy to determine if she had peri-

cardial effusion. Dr. Kanter and I could not make it out. She had a large amount of fluid in her chest which obscured the heart shadow. I saw her early in her stay in the hospital. It seemed to me that the electrocardiographic record was in keeping with constrictive pericarditis. Her blood pressure was 120/110 on that day.

DR. ALEXANDER: The problem is: what will the kidneys show? Will they show an acute type of nephritis?

DR. WILLIAM OLMSTED: I think they may show merely chronic passive congestion.

DR. ALEXANDER: Dr. Thompson, you saw this patient. Do you feel that her disease began with an acute nephritis?

DR. LAWRENCE THOMPSON: Yes, I think she had an acute nephritis a year before her death. I think, in view of the history of another upper respiratory infection, with albumin in the urine before there was any edema, that clinically she had two definite attacks of glomerulonephritis. I venture to say that the kidneys will show some hyalinized glomeruli.

DR. ALEXANDER: Are there any further suggestions about the kidneys?

DR. BARRETT TAUSSIG: I think the total protein is significantly low. The normal ratio is not so important as the osmotic pressures indicated from these values. The osmotic pressure is below the edema level.

DR. ALEXANDER: Dr. Wood, what do you think about the nephritis?

DR. W. BARRY WOOD: I am struck by what Dr. Bulger brought out—the absence of hypertension. This, together with the fact that the eyegrounds were described as normal, is very unusual in glomerulonephritis. I am wondering about the possibility of a tuberculous involvement of the kidneys. The fact that there were few pus cells is against tuberculosis. I do not expect the kidneys to be normal, and I do not think all these urinary changes can be the result of mere chronic passive congestion.

DR. ALEXANDER: The nonprotein nitrogen was not taken on admission. At the first recording it was 45, and it later rose to 85. At first it was not at a uremic level. The terminal high value might not have had great significance. I also would expect some lesion of the kidney—acute nephritis or an acute exacerbation.

DR. CARL HARFORD: The pleural fluid was said to have clotted readily. That might mean it had a high content of protein suggesting capillary damage as an important factor in the production of the edema. Such capillary damage is known to occur in acute glomerulonephritis.

DR. ALEXANDER: That is a good point. We shall proceed to the lesions in the thorax. When the patient entered the hospital there was fluid in her right chest. The fluid was removed from this side and after that a good deal of the fluid was recovered from the left chest. Around May 12, pain, a cough and the production of bloody sputum began, followed by a rise in temperature and leukocytosis.

Later some blood-tinged fluid was removed from her left chest.

DR. THOMPSON: It was obvious from the time she was first seen that there was some pleural complication. From the very beginning, before May 12, she had pink, frothy sputum and raised small blood clots. This dated from the very beginning of our observation, four weeks before death.

DR. ALEXANDER: What did you think was the cause of these symptoms?

DR. THOMPSON: I thought at first the pink sputum was the result of some cardiac lesion, similar to that associated with aortic stenosis. When the pus began to appear, I suspected infarction.

DR. ALEXANDER: Certainly the symptoms after May 12 are those of infarction. If there was infarction, where could it have originated?

DR. ALFRED GOLDMAN: Perhaps in the lung, as the result of a stasis infarct.

DR. ALEXANDER: Was there anything in the pulmonary veins? Dr. Massie, what is your opinion?

DR. EDWARD MASSIE: I think it less likely that the thrombus came from the periphery and more likely that it was due to a slowed pulmonary circulation. The icteric index of 75 was caused perhaps by a great deal of hepatic congestion.

DR. ALEXANDER: What is your impression about this patient's heart?

DR. MASSIE: There are three possible reasons for the patient's anasarca: first, a nephrotic syndrome; second, chronic constriction of the heart and, third, secondary cardiac failure. Chronic constriction of the heart is the best of the three possibilities.

DR. ALEXANDER: In favor of it is the low voltage in the electrocardiogram and the small pulse pressure. If this were a constrictive pericarditis, the mechanism would be a constriction at the mouths of the venae cavae as they enter the heart.

DR. MASSIE: There could also be ventricular tamponade. There is other evidence in favor of constriction of the heart: namely, the definite pleuropericardial adhesions that showed in the roentgenogram. The bloody sputum may be predominantly a cardiac sign.

DR. ALEXANDER: Dr. Wood, what do you think?

DR. WOOD: I think it is logical to say that the patient has concretio cordis caused probably by tuberculosis.

DR. ALEXANDER: Here is a patient with two kinds of pericarditis—the visceral layer is adherent and, in addition, there is pericardial effusion.

DR. MASSIE: It is true that 80 per cent of patients with constrictive pericarditis have tuberculosis, but there are also cases in which staphylococci, pneumococci or streptococci are the causative agents. In this case there was a positive blood culture for hemolytic staphylococci.

DR. ALEXANDER: It was suggested that the high icteric index may have been the result of chronic passive congestion. Why else may it have reached 75?

DR. WOOD: Because of the pulmonary infarction.

DR. ALEXANDER: Yes. Then one might expect

hematogenous jaundice. With bloody fluid in the pleural space, I think it would be not unlikely that the effusion came at that time following the infarction. The patient had polycythemia, whereas, in the presence of a nephritis one would expect an anemia. How may this be explained?

DR. MASSIE: With a chronic pulmonary condition, perhaps this is an adaptive phenomenon. The physiologic reaction to insufficient aeration is a suggestion.

DR. ALEXANDER: This patient then appears to have had a renal lesion. Opinion varies from acute nephritis, acute exacerbation of chronic nephritis, to chronic passive congestion.

DR. MASSIE: I think this patient also must have had an active myocarditis.

DR. JOHN SMITH: This is just a detail, but constrictive pericarditis and adhesive pericarditis usually are caused by the same thing. However, in adhesive pericarditis the heart is apt to be larger in size, and still there may be a small pulse pressure and signs of chronic cardiac disease. With ascites and marked swelling of the lower extremities, one thinks of constriction of the inferior vena cava and cardiac veins. This could be Pick's disease, which sometimes occurs with adhesive pericarditis.

DR. ALEXANDER: That is a good suggestion. There seems to be general agreement that this is a case of constrictive pericarditis, which may account for some of the edema. Dr. Massie feels that there may also be a myocarditis. It is also possible that one may find a "sugar-coated" liver. She may have had a terminal pneumonia. Could this be a staphylococcal terminal pneumonia, Dr. Wood?

DR. WOOD: Yes, with a terminal bacteremia, which is not uncommon.

DR. ALEXANDER'S DIAGNOSIS

Glomerulonephritis.

Constrictive pericarditis.

ANATOMIC DIAGNOSIS

Partial fibrous obliteration of the pericardial cavity with calcification.

Fibrous pleuropericardial adhesions.

Hypertrophy and dilatation of the heart (440 grams).

Partially organized thrombi in the secondary and tertiary branches of the pulmonary arteries.

Infarcts in all lobes of the lungs.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: The pathologic diagnosis in this case is clear and definite—fibrous obliteration of the pericardial sac with calcification, hypertrophy and dilatation of the heart, and cardiac failure. This may be an example of constrictive pericarditis but, as in most cases of this clinical and physiologic syndrome, the pathologic anatomist has great difficulty in demonstrating an organic constriction.

The major points of interest are etiology, pathogenesis and chronology. What was the cause and when did the major disease arise? The most com-

mon cause of calcification of the pericardium is a purulent pericarditis, and the most common cause of purulent pericarditis is the pneumococcus, which spreads from a pneumonia. The presence of pleuro-pericardial adhesions would lend support to that concept of pathogenesis in this patient. This woman had influenza one year before her death and was in bed for two weeks. It is possible that she had a pneumonia and a purulent pericarditis at that time. The presence of numerous capillaries and a few lymphocytes in the pericardium indicates that the lesion was initiated a relatively short time before death, not years ago. The proposal that the pericarditis was caused by the tubercle bacillus is unlikely. There are no gross or microscopic evidences of tuberculosis in the pericardium or regional lymph nodes, and tuberculosis of the pericardium does not progress to plaque-like calcification. The pericardial adhesions and possible constriction of the orifices of the superior and inferior venae cavae led to hypertrophy of the heart and increasing cardiac failure. The velocity of the flow of blood from the lower extremities was slowed and thrombi formed. In the period between four and two weeks before her death a thrombus in one of these veins became loosened and was carried to the lung as an embolus. The lungs were the seat of chronic passive congestion and an infarct therefore formed. In the next few weeks several other emboli entered the lung and there were further foci of infarction. Whether or not the original pink-colored sputum was caused by chronic passive congestion or an infarct cannot be answered definitely. The absence of any depigmentation in the infarcts suggests that they had been present for less than from thirty to thirty-five days.

It is possible that there was an associated pneumonia about the areas of infarction, but this was not demonstrable in sections of the lung at the time of autopsy. My reason for accepting the lower extremities as the source of the emboli is based on published observations that pulmonary emboli are, in from 80 to 90 per cent of cases, derived from the veins of the lower extremities. This is proved readily by demonstration of valve markings on the emboli. Further, autochthonous thrombosis in the pulmonary arteries is rare.

The causes of the obesity and of the amenorrhea are not apparent. The ovaries and adrenals were not abnormal. The thyroid and pituitary glands were not examined. I am sorry to report that we were not able to find any significant subacute or chronic disease of the kidney. There were histologically demonstrable changes in the tubular epithelium that may have been caused by sulfamerazine.

DR. ALEXANDER: In these slides of the kidneys was there enough chronic passive congestion to account for the amount of albumin and red cells?

DR. MOORE: Yes, for a duration of four weeks.

DR. ALEXANDER: There is a definite history of acute nephritis in April 1942 and in February 1943 which might well have been chronic passive congestion.

DR. MOORE: It is not uncommon for a patient to have a clear glomerulonephritis, and for a pathologist to be unable to demonstrate it after two or three years. The lesions heal completely.

DR. ALEXANDER: What kind of heart disease is this? You said she had constrictive pericarditis, followed by hypertrophy of the heart. Was the myocardium normal?

DR. MOORE: As far as we could demonstrate.

DR. WOOD: This was not concretio cordis according to the pathologic description. If there is real constrictive pericarditis the heart is small. This was accretio cordis, leading to hypertrophy and dilation of the heart.

DR. KANTER: What about the polycythemia?

DR. EDWARD REINHARD: It is not uncommon to find polycythemia as a result of chronic passive congestion of the bone marrow.

meningococcic serum shows a mortality rate of 45 per cent and is characterized by a greater incidence of complications and sequelae. The mortality of the disease treated with sulfadiazine and intravenous infusion is less than 10 per cent. The former treatment achieves a much slower response than the latter.

Comment: Judging from many recent reports on the treatment of cerebrospinal fever, the superiority of the sulfonamide treatment over the serum treatment is unmistakable. In short, the physician should make a diagnosis early and begin treatment promptly. Even before the patient is sent to the hospital, it is wise to administer a large dose of sulfadiazine and look after the intake of water, salt and sugar. When the vomiting is not persistent, the prompt oral administration of fluids and sulfadiazine may abort the disease and intravenous injections may not be necessary.

JOHN ZAHORSKY, M.D.

ABSTRACTS AND DIGESTS

THE TREATMENT OF CEREBROSPINAL FEVER

More and more the conception that cerebrospinal fever is a systemic infection with localization in the central nervous system is being adopted by physicians. With increased knowledge of metabolism the harmful effects of dehydration and ketosis on the bodily resistance in all septicemias has become impressed on practitioners. Consequently the suggestion made by Blumberg and Gleich (*Arch. Pediat.* 6:179 (April) 1943) that the meningococcic meningitis be treated with full doses of a sulfonamide drug and a continuous infusion of a 5 per cent solution of glucose in normal salt solution has been received with favor.

The authors mentioned reported several cases of this disease in children treated in this way. The results were exceptionally good. I quote: "The intravenous treatment is continued for twenty-four to thirty-six hours. The volume of infusion given varies from 30 to 60 cc. per pound of body weight per day, accompanied by oral fluids as tolerated. One to 1½ grains of sodium sulfadiazine per pound of body weight per day are given intravenously. The initial dose is one third to one half of the total daily dose. This is followed by one sixth of the total daily dose given every four hours. The same dose of sulfadiazine is given orally, after the intravenous route is discontinued, until the patient's fever and abnormal signs and symptoms have been absent for a week. The drug is then gradually tapered off and discontinued. Urinalysis, blood counts and blood sulfadiazine levels serve as guides in the course of the disease and the therapy. One spinal tap is performed for diagnosis only. A second tap is occasionally necessary for the relief of severe headaches due to increased intracranial pressure."

They conclude that this disease treated with anti-

INFECTED LUNG CYST

Infected Lung Cyst. Leo G. Rigler. *J. Radiol.* 40:485 (May) 1943.

The author devoted the major portion of the studies on this subject to questions of classification, etiology, congenital or acquired origin and mechanics of development.

Two decades ago lung cysts were regarded as something of an academic problem, being considered rare and of relatively little clinical significance and not susceptible to therapeutic procedures. The frequency with which cysts of the lungs are found in routine examinations of the chest under various conditions indicate that these are not uncommon phenomena and should be considered in the differential diagnosis of any pulmonary process. Furthermore, the striking advances in thoracic surgery during the last decade have made it possible to institute genuinely curative procedures so that the importance of diagnosis has been advanced greatly.

The true lung cyst is lined with bronchial epithelium. This is a secreting mucus with fluid. If a communication with the bronchus exists, both gas and fluid will be found in the pocket.

The bronchial communication may open or close so that at different times the cyst may contain fluid alone or both fluid and gas.

The author described five complete cases with case history and roentgenograms and arrived at the following conclusions:

1. The development of a bronchial fistula in a fluid-filled cyst.
2. Multiple infected cysts of the lung simulating loculated empyema or lung abscess.
3. A single large cyst of the lung mistakenly diagnosed as encapsulated empyema. Repeated rib resections with drainage fails to cure the patient.
4. The eventual development of gas containing lung cysts observed at birth into multiple pus-containing pockets simulating lung abscess.
5. A single infected cyst of the lung mistakenly

diagnosed as encapsulated empyema, failing to clear up after several rib resections. The correct diagnosis was made by roentgen examination, confirmed by biopsy, and the patient was cured by lobectomy.

The roentgen findings which differentiate infected lung cyst from other lesions are detailed.

Biopsy of the wall at the time of drainage is the best means of diagnosis.

Radical surgery—extirpation of the portion of the lung containing the cyst, preferably lobectomy—is the best method of attaining a permanent cure.

In cases with a suppurative cavity in the chest, especially in those which do not respond to drainage, the diagnosis of infected lung cyst should be considered.

FRANK BIHSS, M.D.

TREATMENT OF CHRONIC PURULENT OTITIS MEDIA WITH SULFATHIAZOLE CRYSTALS

This is written in contradiction to a recent digest in *THE JOURNAL* which doubted the value of the sulfa drugs in otolaryngology. In our practice we repeatedly have seen the dramatic effect of this chemical on the acute cases of otitis media. The incidence of myringotomy, mastoidectomy and the chronic draining ear has been curtailed sharply since the advent of this drug.

As to the treatment of the chronic draining ear, we have had success with the sulfathiazole crystals. Of five cases that have had an otorrhea of from eight to twenty years duration, four have had mastoidectomies, and all have had the usual treatment with the removal of foci of infection that could be found in the nasopharynx. One of these cases, that of a student at Central College, who had been treated by a specialist for eight years, was given the usual biweekly syringing and associated procedures. With this routine she had never been free from a discharging ear, but by the use of crystals, as described hereafter, she has had no further auditory difficulties.

The following procedure has been used. The inspissated pus was removed thoroughly with boric acid solution followed by hydrogen peroxide. All granulations were touched with a 1 per cent silver nitrate solution. After the canal was dried, microcrystals of sulfathiazole (Steraps—Lilly) were packed in the canal and left for forty-eight hours. The same routine was repeated two more times and on the last treatment the canal was painted with 2 per cent gentian violet solution to soothe the irritated wall.

Following this method of treatment three of the cases have gone for more than a year without any discharge. The other two have been free of this otorrhea for more than three months. The number of cases reported is not large enough, nor have the patients been observed over a long enough time, to draw any definite conclusions. However, all cases have shown satisfactory response to this method of therapy, and we believe it is an improvement

over other methods used in cases of the chronic draining ear.

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THE MALE CLIMACTERIC

The Male Climacteric: Additional Observations of Thirty-Seven Patients. August A. Werner. *J. Urol.* 49:872 (June) 1943.

In previous articles¹ the author outlined and described the symptoms in the woman which accompany ovarian hypofunction or afunction, whether they be due to castration, insufficient ovarian response in the menarche or during the menopause (climacteric). These symptoms may vary in severity from mild to extreme, in which latter instance, the patient may become psychotic (involuntary melancholia).

It is now well established that the male also is subject to the hypogonadal syndrome. In a previous article the author described this syndrome in the male.² Both the female and the male have a pituitary-gonad cycle and any condition in either sex, whether it be castration, hypofunction or afunction, which deprives the system of the normal amount of sex hormones, is likely to initiate the various endocrine-autonomic nervous system imbalances with the production of the syndrome characteristic for the climacteric.

In this article the symptoms complained of by thirty-seven patients are described and the percentages of times that they occur in this group are listed. The records of four different type cases which fall into this group are given. The following chart gives the symptoms and percentages as they occur in the male climacteric, based upon a study of thirty-seven patients.

The Climacteric Syndrome

ORDER OF FREQUENCY OF SYMPTOMS IN THIRTY-SEVEN MALE PATIENTS

Symptoms	Per Cent
1. Nervousness, subjective	100.0
2. Potency decrease or loss	94.9
3. Depression	89.4
4. Decreased memory and concentration	86.5
5. Fatigability and lassitude	75.7
6. Loss of interest and confidence	70.0
7. Sleep disturbed	64.9
8. Irritability	59.4
9. Excitability	51.3
10. Fear of impending danger, ill at ease	51.3
11. Occipito-cervical aching	51.3
12. Numbness and tingling	51.3
13. Vertigo	48.6
14. Hot flushes	46.0
15. Headache	46.0
16. Constipation	43.2
17. Tachycardia, palpitation and dyspnea	40.5
18. Crying	37.8
19. Sweating	35.0
20. Scotomata	35.0
21. Itching	29.7
22. Personality change, unsocial	27.0
23. Desire to avoid crowds	27.0
24. Vague pains	24.3

1. Werner, August A.: Syndrome Accompanying Ovarian Hypofunction, *J. Missouri M. A.* 28:363 (August) 1931; Syndrome Accompanying Deficiency or Absence of the Ovarian Follicular Hormone, *Endocrinology* 19:695-700 (November-December) 1935.

2. Werner, August A.: The Male Climacteric, *J. A. M. A.* 112:1441 (April 15) 1939.

25. Cold hands and feet	21.6
26. Thoughts of self-destruction	19.0
27. Psychoses	13.5
28. Fornication	13.5
29. Tinnitus	10.8
30. Self-accusatory	5.4
31. Suicide, attempted	5.4

Testosterone propionate is effective in relieving these symptoms in the male just as estrogens are in relieving the similar syndrome in the female.

AUGUST A. WERNER, M.D.

CARCINOMA OF THE PROSTATE

Carcinoma of the Prostate: Percentage of Cases Suitable for the Radical Operation. J. A. Campbell Colston. Diagnosis and Treatment of Early Carcinoma of the Prostate. R. B. Henline. The Treatment of Benign Prostatic Hyperplasia in Relation to Prostatic Carcinoma. L. F. Greene and G. J. Thompson. J. A. M. A. 122:781 (July 17) 1943.

At the present time there is much controversy concerning the treatment of carcinoma of the prostate. In the July 17 issue of *The Journal of the American Medical Association*, three articles on carcinoma of the prostate were presented. J. A. Campbell Colston of Baltimore reported a study made of the percentage of cases suitable for the radical perineal operation.

The criteria of cases thus suited is based greatly upon a careful rectal examination. The malignant growth should not extend beyond the capsule of the gland and there should be no evidence of metastasis. On this basis the Brady Urological Institute, over a five year period, selected only 22.7 per cent of all cases diagnosed as carcinoma of the prostate for the radical perineal operation. The cases were followed with special reference to recurrence, metastasis and functional results. Of these cases which underwent the radical perineal operation, 5.5 per cent were hospital deaths, 65.8 per cent are living with no evidence of recurrence or metastasis, and the remainder are either dead of, or living with, metastasis or recurrence.

With a new technic of suturing the bladder neck to the stump of the urethra, the functional results have been much improved. In this series more than 86 per cent obtained a good functional result.

The diagnosis and treatment of early carcinoma of the prostate was discussed by Roy B. Henline of New York. There are three types of prostatic disease: prostatic infection, prostatic hyperplasia and prostatic carcinoma. Each of these usually develops in a different anatomic portion of the gland. There are no symptoms of early uncomplicated prostatic carcinoma. Only when it is complicated by some other prostatic disease or by a routine rectal examination, will early prostatic carcinoma be encountered. Since statistics show that 15 per cent of the men over 50 years of age have prostatic carcinoma, a rectal examination should be a routine procedure on all men.

Henline feels that the best treatment for early prostatic carcinoma should be Young's radical perineal prostatectomy because it is only by this pro-

cedure that the entire gland and its capsule is removed, thus offering hope for complete eradication of the disease.

Green and Thompson of Rochester, Minnesota, discuss the treatment of benign prostatic hyperplasia in relation to prostatic carcinoma. The surgical treatment of prostatic hyperplasia is carried out only to remove tissue to relieve the patient of his symptoms of urinary obstruction and restore the act of micturition to normal. Whether this is done by the perineal, suprapubic or transurethral route, the desired result is the same.

In a series of six cases reported by them it is shown that following all three types of prostatectomy, the patients returned from six to seventeen years later and a diagnosis of prostatic carcinoma was made. Also, in this series of cases, two patients, one having had a suprapubic and the other a transurethral prostatectomy, were found to have prostatic carcinoma complicating their hyperplasia. Since their operations, seventeen and nine years ago respectively, repeated examinations have failed to show any evidence of recurrence.

They state, however, that the only operation devised to remove all prostatic tissue is the radical perineal operation. But even with this procedure only about 3 per cent may be classed as cures.

Comment: These three well presented articles, in the main, have approached the subject of treatment of carcinoma of the prostate from only one side, namely, that of radical surgical removal of the gland. Due to the fact that metastasis from prostatic carcinoma is sometimes a late manifestation of the disease and that when present is usually a slowly progressing complication, the radical surgical procedure often seems too radical in the light of many reports showing the excellent results obtained from the use of estrogens or a combination orchidectomy and estrogen therapy.

EARL A. POWELL, M.D.

NEIL S. MOORE, M.D.

EFFECT OF HEPARINIZATION

The Effect of Heparinization on Experimental Post-Irradiation Tissue Changes in the Lung. Floyd Boys and Ivor David Harris. Am. J. Roentgenol. 50:1-7 (July) 1943.

The effect of heparin as an anticoagulant in the blood stream has been well known for a considerable period of time. The method by which it acts on the fundamental processes of inflammation has not been given so much study. Only after a serous exudate coagulates in the form of fibrin does the development of new organized fibrous tissue begin. If the formation of fibrin in fluid exudate can be inhibited by heparin, then a diminution of fibrosis might be expected. Experimental work has been done indicating the potency of this drug in preventing peritoneal and pleural adhesions.

Working from this aspect the authors attempted to investigate its influence on prevention of post-radiation fibrosis of the lungs, a condition which

may follow the extreme repeated irradiation of the lung tissue from radiation therapy of the chest for carcinoma.

Young rabbits were used for the experiments. All animals were treated with roentgen radiation in sufficient quantity and frequency to produce various degrees of inflammatory reaction in the lungs. Some were used as controls, receiving roentgen ray therapy only and others received roentgen ray therapy plus varying amounts of heparin. Heparin was given subcutaneously in an attempt to keep the blood coagulation time more than twenty minutes. Colored photographs of the lungs were taken at autopsy to serve as a method of permanent comparison. The lungs of the animals receiving irradiation *without* heparin showed: The pleura was injected, and slight amounts of free fluid were observed occasionally in the pleural gutters. No adhesions occurred in any of these animals. The lungs presented externally large areas of brownish-red tissue representing collapsed alveoli or alveoli containing exudate with some areas of normal pale salmon-colored parenchyma. These lungs were one and a half times their normal size, and the average weight was twice normal. As judged by color, crepitus and cut surface inspection, the control lungs presented reduced aeration. There was a moderate amount of bloody exudate on the cut surfaces.

After a time pleural adhesions were noted and encapsulated effusion resulted. Microscopically, the pleura was edematous and hyperemic; the parenchyma showing similar changes with polymorphonuclear infiltration. Areas of focal atelectasis were noted and there was a lessened aeration of the lungs. The intima of the arteries showed edema.

In marked contrast to this, the lungs of animals receiving irradiation *with* heparin showed much less severe reactions. In contradistinction to the dusky edematous dark red appearance, the lungs presented a pink healthy condition free of evidence of congestion or fibrinous exudate. They were smaller in size by weight and volume. Microscopically there was less edema or cellular reaction.

These experiments seem to indicate that heparin has a definite effect on the inflammatory process in the lung parenchyma. The inflammation which follows roentgen irradiation damage to the lungs of rabbits is somewhat less extensive when heparin is administered than without heparin and the later changes (pulmonary fibrosis and pleural adhesion formation) are diminished markedly. This observation is consistent with the results reported by Lehman and Boys in studying the effect of heparin on the inflammatory process in the peritoneum.

The potentialities of the control of tissue fibrosis with heparin are barely indicated by this study. Since heparin is a dangerous drug, much more extensive work covering other types of inflammation is required before it will be possible to make practical use of the phenomenon so strongly suggested by the present results. Certainly, the clinical administration of heparin to protect the lungs during

and after irradiation is not justifiable on the basis of the present work.

From a more fundamental point of view, the observations resulting from the present experiments suggest a new technic for the measurement of the effect of roentgen irradiation on various tissues, particularly in the field of malignant tumors. The estimation of the lethal effects of roentgen irradiation on cancer cells in experimental studies has been confused by the accompanying fibrosis which helps to produce a relative ischemia. It still apparently is not established in the minds of radiotherapists and pathologists whether the effect of roentgen irradiation in checking malignant growth is entirely a direct destruction of the cancer cell, or whether this destruction is much or little enhanced by the accompanying fibrosis. If fibrosis can be diminished markedly in the experimental animal with the use of heparin, there may be at hand a new biological method of measuring direct roentgen irradiation effect on cells in the living body.

L. R. SANTE, M.D.

ALLERGENIC RELATIONSHIP OF RAGWEED TO BOTANIC RELATIVES

Allergenic Relationship of the Pollens of Dwarf and Giant Ragweed to Several of Their Botanic Relatives. Frank A. Simon. *J. Exper Med.* 77:185 (Feb. 1) 1943.

By means of antibody neutralization and subsequent local passive transfer it was shown in five cases that dwarf ragweed completely neutralizes reagins for itself and the other compositae tested—giant ragweed, cosmos, dandelion, sunflower and golden rod. In one case giant ragweed produced a similar result. In all six cases, cosmos, sunflower, dandelion and golden rod, while capable of neutralizing reagins for themselves and frequently for one another, failed to neutralize completely reagins for dwarf and giant ragweed. These facts constitute evidence that hypersensitiveness of this type develops as the result of allergenic stimulation rather than in some other manner; that the pollen of the ragweeds and their botanic relatives contain, in addition to species specific allergen, multiple common allergenic determinants which vary in their distribution among related species.

Comment: The compositae used in these experiments have insect-borne pollen and do not induce hay fever as long as their flowers are left undisturbed. Their pollen gave positive skin reactions in all patients who have hay fever due to ragweed pollen, and it is of historical interest that golden rod and sunflowers formerly were thought to be the cause of autumnal hay fever. The practical implication of this study is confirmation of the clinical experience that treatment with ragweed solutions brings about amelioration of symptoms in those who have hay fever during the period of ragweed pollination and have positive cutaneous reactions to the pollen of the insect-borne compositae as well as to the pollen of ragweed.

C. H. EYERMANN, M.D.

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SEPTEMBER, 1943

EDITORIALS

THE STATE CANCER HOSPITAL

In this number of THE JOURNAL is a report of the Medical Director of the Ellis Fischel State Cancer Hospital to the physicians of Missouri covering the first three years of operation. Over three thousand indigent patients, largely from the rural counties, have received expert medical and hospital care which would not otherwise have been available to them. The administrator has kept the daily cost per patient of this highly specialized hospital at the remarkably low figure of \$6.30. All Missourians, as well as the hospital staff, may be proud of the accomplishments of this state institution. However, there are many facts presented to which further thought and plans could be well devoted.

Forty-three per cent of the patients brought to the Hospital did not have a malignant tumor. This is both good and bad—good because it indicates that many people are coming to the physician on the mere suspicion that they have cancer; bad because it reflects the lack of a service that should be available to every indigent person—a tumor diagnostic service. As pointed out by Dr. Ackerman, the saving in the cost of transportation of the three hundred forty-one patients alone would more than pay for this innovation.

Of forty-three patients with carcinoma of the stomach only twelve were resectable at the time of admission. Of one hundred patients with carcinoma of the breast only thirty-eight were operable; and of the thirty-eight only ten had no metastases in the axillary nodes at the time of operation. This record is far better than that of forty years ago, but much remains to be done in the field of education of the laity. No group has a greater opportunity than the medical profession. Individually and collectively the profession must preach this doctrine—the cure of cancer depends directly on early recognition and treatment.

The successful treatment of cancer involves not only a definite surgical procedure and exposure to radiant energy but continuous follow-up and the use of further measures if needed. The trip to Columbia from many parts of the state is time-con-

suming and expensive. The establishment of interrelated cancer clinics for diagnosis and for post-operative treatment, as authorized in the act creating the hospital, would go a long way toward providing the necessary control.

Through the indomitable spirit of Ellis Fischel, Missouri became one of the first states in which the resources of government have been pitted against the onslaught of cancer. Let us not fail in providing funds and moral support now that a beginning—a good beginning—has been made.

BLUE CROSS SERVICE

Members of the Missouri State Medical Association, who are not at present identified with such a plan, may enroll in Group Hospital Service, St. Louis, during the period September 1 to September 30, with service effective on October 1. This opportunity is available also to secretaries, technicians and other nonprofessional employees of physicians. Applications may be obtained from the Missouri State Medical Association, and must be completed and returned to the office together with \$1.00 enrollment fee and one year's dues before September 30.

Many members of the Association are now members of the Blue Cross plan through local medical societies. These groups will remain on their present basis. The State Association group is being formed to make the plan available to physicians who have not as yet had an opportunity to enroll. The following counties have units operating at present: Audrain, Boone, Buchanan, Cole, Cooper, Greene, Marion, Pike, St. Louis City and St. Louis County. Members of the Jackson and Clay county medical societies are separate and distinct units through the Blue Cross Service office in Kansas City and members in those two counties who are interested should contact Mr. W. H. Bartleson, Jackson County Medical Society, 610 Argyle Building, Kansas City, who is group manager for the Jackson County Medical Society Group, prior to September 15.

Enrollment closes on September 30 and no dependents or new members will be accepted after that date until the next anniversary date, September 1, 1944. Members may include as dependents all unmarried children under 18, in addition to their wives or husbands. Unmarried children more than 18 may be enrolled as sponsored members. Office assistants may be included as sponsored members.

The annual cost of Group Hospital Service membership in this plan follows:

Single membership	\$ 9.00
Family membership	18.00
Husband and wife only	15.00
Sponsored members (each)	9.00

There is no age limit nor is a physical examination required. All members receive the same benefits when they go to the hospital. Hospital services include: thirty days' care each membership year;

two bed room (not a ward); private room at extra charge, if available; meals, special diets, general nursing; maternity care (ten months membership required); routine laboratory work; all drugs, medicines and biologicals; all glucose, oxygen and sera, except blood and blood plasma; all dressings and casts (no patented braces); operating room (no limit); ambulance service (restricted to highway accidents and hospital transfers, fifty miles); emergency outpatient care.

Special benefits include: one third off semiprivate room rate for subscribers and sponsored members for an additional six months; fourteen day diagnostic care for tuberculosis, mental, social, drug and alcoholic diseases in a general hospital, or, up to \$90.00 in any member year in private or governmental sanatoria; special arrangements for care of communicable or contagious diseases in isolation hospitals.

Group Hospital Service, St. Louis, is a nonprofit community service, sponsored by the medical societies and the hospitals. New benefits have been added ten times in the last seven years and the plan has paid more than \$4,000,000 in hospital bills.

Application blanks may be obtained from the Missouri State Medical Association, 623 Missouri Building, (3) St. Louis. These should be returned to the State Association accompanied by a check made payable to Group Hospital Service, Inc., before September 30.

PHYSICIAN, HEAL THYSELF

This terse, ancient exhortation, with a dash of mockery added, presents a challenge to the medical profession of today; as though it were a giant, flabby Houdini, strapped and tied, inextricably enmeshed. And many are chuckling as they watch it wriggle and squirm trying to escape.

Physicians appear segregated from the world, on one side by the high mountains of their own isolationism; on the other by quagmires and morasses of the cults, the ists and the isms. Surrounding the whole and balefully licking their chops are the omnivorous bureaucrats, social schemers and planners.

This numerically small band, disorganized and buffeted, either may choose to continue the proud, independent, disjointed, conscientious, but ineffectual, sorties to break out of this ever-narrowing encirclement, or, its members must get together, unify their efforts and present a really militant, well-organized front.

Let us examine the various agencies at work against the medical profession: First, what of ourselves? In their considered judgment, men of organized medicine have too long absented themselves from participation in the political arena. They have contented themselves too long with the philosophy that "by their deeds shall ye know them," as though this were sufficient evidence to the world at large that their domain, their estate, shall remain forever in *status quo*. As though the

world could change very greatly throughout, and yet sequester this group for a single, unchanged anachronistic niche!

The results of this policy are obvious. The profession scarcely can muster 50 per cent support in the legislative chambers. Therefore, this "holier than thou" attitude is *passee*!

A second point to ponder in the profession's own structure concerns the acquisition of a medical education. Because of a general revulsion at the low state of medical training, as it was about twenty years ago, a house cleaning was carried out. Many class "B" and "C" schools were closed. More money, more years and more training became necessary for graduation. Much potentially good material, therefore, has entered the practice of medicine via the "back door." In other words, because of laudable, thoroughly worthwhile, and absolutely self-applied, restriction imposed by the medical profession in order to improve medical learning and practice, numbers of men who could not afford to follow the regular course of training have been driven away. They have chosen other paths of healing and have cashed in to the present discomfiture of the medical profession.

How often has one seen them in rural communities and as often in the cities with their "clinics." They do blood counts, electrocardiograms, basal metabolism determinations, and all the other ostentatious theatrics associated with the maneuvers of "practicing medicine." No one seems to know or care whether or not their results are accurate or could be interpreted correctly if they were. Perhaps some of the "regulars" in the rural districts and in the cities could not either! But the patient falls for it. In their schools a part of the curriculum is called "practical psychology." If a better name were needed for such a course it is: salesmanship.

It sounds comforting to say that this type of business and training is not needed, is off-color and cannot last, but words and hard headed reactionism do not refute facts. When honest but untrained men of the medical profession try to imitate, the effect is usually ludicrous.

If every rural county seat could have a true clinic of well trained men with proper laboratory and hospital facilities, these mushroom, self-ordained and quasi "clinics" would die out posthaste.

One must remember that there is a real maldistribution of good medical care. The profession gets the dubious credit or blame. It is the profession's problem and it should correct this condition.

The cost of a catastrophic medical episode is enough to make the stout-hearted squirm and grunt. And when commiserating planners advise people to wail and scream, they really go all-out. A prepaid medical service under the direction of medical men would remedy this situation. Not alone should this coverage serve the cities but the entire state as well.

Another phase which always has been a tender point for the "regulars" to have touched includes that group of patients treated for such things as

lumbago and sciatica, who have been relieved symptomatically by manipulation. Call it psychotherapy or what one will, physicians are ostrich-like if they neglect to study these procedures and really ascertain any possible merit they may possess.

Not for every disease, not for every backache or neck pain, but undoubtedly there is a certain virtue in manipulation. One who is not too adverse to accept this might read Fisher's "Treatment by Manipulation," published by Hoeber, or consult leading orthopedists.

Physicians should read up, investigate and find out before condemnations are issued. It may be that manipulative treatment should be made a part of regular medicine. Stranger things have happened.

The only fair and just criticism of the osteopath should be in his straying away and digressing from the original concept of his profession. Why not absorb his merits, if any, and give him the real benefit of medical training? As things are now, he has stolen a spurious veneer. This coalition between irreconcilables has occurred before in medicine. And once a convert has entered the sanctum sanctorum, he usually prays and shouts the loudest of all.

If some way were evolved by which the deserving poor boy could get financial help through school; if more physicians could establish properly equipped and trained clinics in the rural communities; if an absolutely fair evaluation and appraisal could be made of manipulative therapy; if a more widespread, prepaid medical care plan could be instituted throughout the state; if a more intelligent, aggressive and closer liaison could be established with the lawmakers, there would be little left for the schemers and the uplifters to shout about.

Perhaps the hot breath of threatened legislative fiat in these matters will warm the profession's past molasses-in-January tempo in dealing with issues which they themselves should initiate. The profession should not await the prodding of politicians to make it look forward and prepare itself and its special domain. It should anticipate rather than procrastinate.

For by overcoming such derelictions the medical profession would have a goodly part of the answers to the taunt, the challenge and the mockery of these words: "Physician, heal thyself!"

VINCENT T. WILLIAMS, M.D.

THE SIXTY-SECOND GENERAL ASSEMBLY

The 62nd General Assembly of Missouri convened on January 6, 1943. It was termed early in the session by some newspaper writers as the "blue-ribbon" assembly. Both houses voted to recess from July 17 to August 23 and upon the latter date to adjourn. At the Governor's request the House was called back into session on August 10 to appropriate sufficient funds for administering the Missouri Social Security program.

During the session a total of 838 bills were intro-

duced which number gives some indication of the reason for the legislature's lengthy sojourn in Jefferson City. Undoubtedly considerable pressure was placed on individual members of the legislature during the consideration of many controversial measures. Accusations were made from time to time that too much politics entered into the deliberations on numerous bills. Some charges were made also of "log-rolling" playing its usual part in the legislative maneuvers. By the end of the session the early "blue-ribbon" title for the assembly had been dropped in most references.

From the total of 838 bills introduced some twenty-nine of them affected or were of interest to the medical profession. A digest and the final action taken on these bills appears on page 300 in this issue of THE JOURNAL.

On the whole, it appears that the medical profession fared well at the hands of the 1943 legislature which did not enact into law any proposed legislation that would have lowered the present medical standards. However, in drawing down the final curtain on the 62nd General Assembly the efforts of certain sectarian healers to secure the title of physician and qualify to practice medicine through legislative fiat should be remembered.

NEWS NOTES

Dr. R. E. Banner, formerly of Neosho, has assumed duties as head of the county health unit in Johnson County with headquarters at Warrensburg.

Dr. E. A. Cunningham, Louisiana, has been appointed district chairman of district 31 of the Missouri War Chest, Inc. The district includes Audrain, Lincoln, Monroe, Montgomery, Pike and Ralls counties.

Dr. M. L. Gentry, Jefferson City, spoke before members of the Macon County Health Council at Macon on July 14. His subject was "The Advantages of a Well Baby Clinic."

The Missouri State Health Department in cooperation with the Parent-Teacher Association of Ferguson conducted a complete health examination of 125 children entering school at Ferguson this fall. The examinations were conducted at the Central School on July 28, 29 and 30.

DEATHS

Simon, John H., M.D., St. Louis, a graduate of the Missouri Medical College, 1900; Fellow of the American Medical Association; honor member of the St. Louis Medical Society; aged 77; died May 24.

Royston, W. P., M.D., El Dorado Springs, a graduate of Washington University School of Medicine, 1883; honor member of the Vernon-Cedar County Medical Society; aged 82; died May 30.

Gibbs, Robert Thomas, M.D., Mexico, a graduate of the Missouri Medical Society, 1884; former member of the Audrain County Medical Society; retired; aged 91; died June 21.

McCallum, Francis Marion, M.D., Kansas City, a graduate of the Ensworth Medical College, 1893; former president of the State Board of Health; honor member of the Jackson County Medical Society; aged 78; died June 26.

Toalson, George F., M.D., Mexico, a graduate of the Missouri Medical College, 1888; Fellow of the American Medical Association; member of the Audrain County Medical Society; aged 78; died June 29.

Brown, John L., M.D., Campbell, a graduate of the St. Louis College of Physicians and Surgeons, 1890; member of the Dunklin County Medical Society; aged 74; died July 2.

INCIDENTALLY

FROM THE EXECUTIVE SECRETARY

Congress has recessed until mid-September.—The Missouri representatives should welcome the views of the medical profession on Senate Bill 1161, introduced by Senator Wagner of New York on June 3.—That section of the bill which proposes to establish a Federal system of medical and hospitalization benefits needs to be discussed with the Missouri Representatives before Congress reconvenes.—Who can point out to them the devastating effects of state medicine on medical service to the public more authoritatively than the practicing physician?

Have the friends of the medical profession in the 1943 Missouri General Assembly received thanks for their efforts in upholding the present medical standards in this state?

If all members of the Association would notify the Association office of any changes in address, the receipt of their Association mail would be facilitated.

Certainly no one deserves a vacation this summer more than the physician who has not been able, during the last year, to find time to call his own.

The question recently was asked: Would it be a good idea for more physicians in civilian practice to write their colleagues in service now and then, relating things of interest from the home front?

The newly formed Council on Medical Service and Public Relations of the American Medical Association held its first meeting in Chicago on July 21.—The nature of the work to be undertaken by the Council was discussed and consideration

given to a budget following organization proceedings.—The consideration of medical problems coming under its jurisdiction will probably include the Wagner-Murray-Dingell Social Security bill, hospital-physician relationship, possible representation in Washington, as well as other phases of public relations.—Another meeting of the Council is to be held on September 9 and 10.

An important and significant conference between members of Congress and their constituents back home was held August 16 at the Radisson Hotel in Minneapolis.—Three sessions were arranged.—The first two concerned farming and retail business; the third session was devoted exclusively to physicians, dentists, hospital administrators and pharmacists and their problems.—The Wagner-Murray-Dingell "cradle-to-the-grave" proposal was considered at great length, particularly in reference to the medical aspects of the bill. Senators and Congressmen from the states of Minnesota, Iowa, Wisconsin, North Dakota and South Dakota were present and took part in the discussion.

ORGANIZATION ACTIVITIES

COMMITTEE ON CONTROL OF VENEREAL DISEASE

The Committee on Control of Venereal Disease met with representatives of the State Board of Health in Jefferson City on July 15. The following were present: Drs. Rogers Deakin, St. Louis, Chairman; Arthur W. Neilson, St. Louis; John Williams and Rolla Wolcott, Jefferson City; C. T. Ryland, Lexington, and Mr. Raymond McIntyre, St. Louis.

Drs. John Williams and Rolla Wolcott, of the State Board of Health, reviewed for the Committee various aspects of the venereal disease control program in the state during previous years as well as measures and steps contemplated for the future. These consist, for the most part, of the continued use of county, district and municipal health centers and subsidized physician clinics.

As has been the case heretofore, the Committee found the State Board of Health most anxious to institute only such steps as met with the approval of the Committee and most eager for such advice as the Committee felt constrained to offer.

The Committee has served in the past, and will continue to serve, in an advisory capacity to the State Board of Health on matters relating to the control of venereal disease.

A letter to the Missouri State Medical Association from the Surgeon General of the United States Public Health Service was read and discussed. The letter requested the cooperation of the State Medical Association with the State Bar Association in efforts to solve the problems of prostitution and delinquency. It was the consensus of opinion that this was a matter, the initiative of which rested

with the Bar Association. It was voted that the Executive Secretary of the Association be authorized to express the willingness of the Committee to cooperate with the State Bar Association in any actions which they might initiate.

ROGERS DEAKIN, M.D., *Chairman.*

MISCELLANY

ARMED FORCES MUST HAVE 6,000 MORE PHYSICIANS BY JANUARY 1

The armed forces must have 6,000 additional physicians by January 1, 1944, *The Journal of the American Medical Association* reports in an editorial in its August 7 issue. *The Journal* says:

"At a conference of the Directing Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians, held on July 31, with the War Participation Committee of the American Medical Association and in the presence of Mr. Paul V. McNutt, chairman of the War Manpower Commission and representatives of the Army and Navy medical departments and the Public Health Service, it became apparent that the medical profession must produce toward the winning of the war an additional six thousand physicians for the armed forces before January 1, 1944. Pursuant to a realization of this objective a directive has gone to the generals in command of the various service commands authorizing them to induct into the service physicians between the ages of 38 and 45 who have been declared available by the Directing Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians and who are otherwise subject to Selective Service.

"The needs of the armed forces are real. The members of the War Participation Committee raised with the representatives of the various governmental agencies all the questions that have from time to time challenged the need; the challenge seems to have been met effectively. Indeed, the intimation was made clear that the needs of the armed forces will be met by specific regulations of the Selective Service Administration or the enactment of necessary legislation if required. All physicians up to 45 years of age who have been indicated as available have therefore placed on them now the responsibility for an immediate decision as to their enlistment with the armed forces. The need is so positive that questions of essentiality of men in positions of teaching and research and in industrial medicine are likely to be rigidly reviewed in the near future with a view to extracting from civilian life every one that can be spared.

"As the war continues and intensifies new needs for the services of the medical profession become apparent. An army in motion and one engaged in the kind of aggressive combat that now concerns our armed forces needs physicians in even greater number than have heretofore been demanded. Many thousands of interned aliens and prisoners are now the burden of the United States and must be given medical care.

"If there is any physician who still hesitates under these circumstances, he should realize the added advantage to him of accepting now the commission that is proffered. Should it become necessary in the near future, as it seems quite likely, to enlist new activity by the Selective Service Administration and the Officers' Procurement Service to bring in the six thousand physicians that are so certainly required, those recruited by that technic will inevitably begin their service with the minimum commission that is offered, namely that of first lieutenant. Until that technic is installed, the

men of special competence and of years beyond those of the recent graduate have the assurance of careful consideration and a commission more nearly in accord with age and experience.

"The call here made has the approval of the Directing Board of the Procurement and Assignment Service and of the War Participation Committee of the American Medical Association. The medical profession may well be proud of the fact that it has been the only group given, by directive of the President, the responsibility of maintaining service in civilian life and at the same time supplying the needs of the armed forces. Let us not fail in meeting fully the trust that has been placed upon us."

CORONER'S MEDICAL EXAMINER

If other counties in Missouri should follow the recent action taken by St. Louis County officials in appointing a pathologist as a special aid to the coroner, it is reasonable to assume that a vast improvement in securing criminal justice would ensue. The wide publicity given the Melendes case in St. Louis once again has called attention to the necessity for pathologic services to aid the coroner's inquest. The following letter appeared in a recent issue of the *St. Louis Post-Dispatch*:

IDEA FOR CORONER'S MEDICAL EXAMINER FIRST SUGGESTED BY MACJ

To the Editor of the Post-Dispatch:

Your recent editorial "Another Failure of the Grand Jury," apropos the grand jury's report on the Melendes case, calls attention to the proposal of two professors of pathology, Dr. Robert A. Moore of Washington University and Dr. Henry Pinkerton of St. Louis University, that provision be made for the appointment of a pathologist as special aid to the Coroner. (The proposal made by Dr. Moore and Dr. Pinkerton was recently published in the "Mirror of Public Opinion.")

Almost without exception, the many specific suggestions made during recent years that would improve our criminal procedure can be found in the recommendations and bills proposed to the Legislature in 1927 and again in 1929 by the Missouri Association for Criminal Justice as a result of its state-wide crime survey. This, I am sure, has been a matter of interest and gratification to those who had a part in the really very notable work done by that association.

One of the reports of the association dealt with the office of coroner. Its author was Raymond Moley, who spent the better part of two years in Missouri assisting in this survey. In his review of the statistics and data touching the office of coroner which the survey gathered, and in the preparation of his report, Mr. Moley had the assistance of an advisory committee composed of Dr. R. B. H. Gradwohl, Dr. R. L. Thompson, Dr. H. J. Scherck, eminent physicians of this city, and Roy Hamlin, an able and experienced lawyer of Hannibal.

Pursuant to the recommendations of that report, a bill was drafted and submitted to the Legislature creating the office of medical examiner for each county and the City of St. Louis, to be filled by appointment by the governor. The bill required that the medical examiner should be a graduate of a reputable medical school, should have served an internship in an accredited hospital, should be experienced in performing autopsies over a period of at least two years under competent supervision. The bill also required that the medical examiner be indorsed and recommended by the local county or city medical society where there was such an organization, and, where there was none, then by the State Board of Health.

It further required that the medical examiner should be notified immediately in all cases of violent or casual death, or death without medical attention; he should immediately take charge of the body and make a full

and complete examination thereof, and, if necessary, hold an autopsy, keep a complete record of such examination. In all cases where the death appeared to have been caused by the act or negligence of another, the medical examiner would have been required to file copies of his record with the coroner and prosecuting or circuit attorney. The bill gave the medical examiner the power to summon witnesses, administer oaths, take and preserve evidence, and required him to transmit copies of such evidence to the coroner and prosecuting officers.

Thus, again it is seen that this most recent wise suggestion of Dr. Moore and Dr. Pinkerton for the improvement of criminal procedure, which has received your editorial indorsement, was anticipated by the Missouri Association for Criminal Justice.

GUY A. THOMPSON.

LEGISLATION

REVIEW OF STATE LEGISLATION

There were twenty-nine bills introduced in the 62nd General Assembly which affected or were of interest to the medical profession. A brief digest of the proposals together with the actions taken is presented:

H. B. 198. Proposed that citizens of Missouri in the armed forces not be required to pay state income taxes on service incomes. This was killed in the House Committee on Taxation and Revenue.

H. B. 214. Professional or occupational license not to be forfeited during service in the armed forces. This bill passed the House but was killed in the Senate Judiciary Committee.

S. B. 154. Actions for malpractice not to be barred by Workmen's Compensation Act. This was killed in the Senate Insurance Committee.

H. B. 299. The Basic Science Bill calling for an examination in the basic sciences of all applicants to practice the healing art as a prerequisite to taking the professional examination for a license. This was killed in the Public Health Committee of the House.

S. B. 98. Proposed the same as H. B. 299. This was killed in the Public Health Committee of the Senate.

S. B. 28. Proposed to change the present method of recording births and deaths as well as other procedures in the Vital Statistics Department of the State Board of Health. This bill, amended, passed the Senate but after other amendments in the House was defeated in the Senate.

S. B. 79. This bill makes certain changes in the present Food and Drug Act. This passed both Houses and was signed by the Governor.

C. S. H. B. 45. Requires a medical examination and certificate of freedom from syphilis as a precedent to issuance of a marriage license. This passed both Houses and was signed by the Governor.

H. B. 584. Proposed to create a new State Department of Health and to consolidate the various licensing boards for the healing arts under one head. This was killed in the House Committee on Governmental Reorganization.

S. B. 3. To reduce the birth registration fee. This failed to pass the House.

H. B. 421. Permitting children with rheumatic heart disease to be treated in the State University Hospital under the crippled children provisions. Passed both Houses and was signed by the Governor.

S. B. 70. Raises the age limit for admission to the Children's Hospital at the State University up to 21. This passed both Houses and was signed by the Governor.

H. B. 134. Proposed to have a director of special education to make tests for deaf persons. Killed in the Senate Education Committee.

H. B. 430. Removing age restrictions from attendance at the Missouri School for the Blind and the Missouri

School for the Deaf. Killed in the Senate Education Committee.

H. B. 561 and H. B. 572. Proposed the commitment of "habitual drunkards" and "drug addicts" to the insane hospitals. This was killed in the Senate Wills Committee.

S. B. 165. Proposed the dissolution by the Superintendent of Insurance of companies or corporations furnishing medical or hospital expenses. This was killed in the Insurance Committee of the Senate.

S. B. 103. Proposed certain requirements for group "hospitalization" contracts. This was killed in the Senate Insurance Committee.

H. B. 590. Proposed to redefine the practice of osteopathy in terms of the practice of medicine. This bill was not voted on by the House for final passage and was dropped from the calendar.

H. B. 85. Proposed to give osteopaths the title "physician" and to permit them to practice in tax-supported hospitals. This bill was never brought up for final passage in the House and was dropped finally from the calendar.

H. B. 480. Required a report of prescriptions of liquor to be filed. This was killed in House committee.

H. B. 300. Required anyone using the prefix "Doctor" or "Dr." before his name to affix suitable explanatory words designating the type of practice which his license permitted. This bill passed the House but was killed in the Senate Public Health Committee.

S. B. 113. Defined narcotic drugs including marijuana. This was killed in the Senate Public Health Committee.

S. B. 112. Referred to licensing the manufacture and sale of narcotic drugs. This was killed in the Senate Public Health Committee.

S. B. 9. Defined and regulated naturopathy. This was killed in the Public Health Committee of the Senate.

H. B. 319. Same as S. B. 9. This bill failed to pass the House.

H. B. 212. Proposed to repeal the present Income Tax Law. This was killed in House committee.

H. B. 510. Requires no notarization of income tax returns. This passed both Houses and was signed by the Governor.

H. B. 417. Appropriation bill for University of Missouri. A proposed Senate Committee Amendment setting up \$125,000 for the next biennium for establishing the last two years of University of Missouri Medical School in Kansas City was defeated in the Senate.

BOOK REVIEWS

GERIATRIC MEDICINE. Diagnosis and Management of Disease in the Aging and in the Aged. Edited by Edward J. Stieglitz, M.S., M.D., F.A.C.P. Consultant in Gerontology, National Institute of Health; Visiting Physician, Medical Service, Baltimore City Hospitals; Attending Physician, Washington Home for Incurables, Washington, D. C. Illustrated. Philadelphia: W. B. Saunders Company. 1943.

This book is very comprehensive inasmuch as the editor considers the aging process to begin in the fetus and continue throughout the life span. He has forty-five authors as assistants in the 887 pages of the work. There is considerable duplication, as many of the writers discuss arteriosclerosis. The work of Timothy Leary is mentioned once, but not one of them seems to appreciate the tremendous clinical significance of a low cholesterol diet in the treatment; indeed, some of them suggest a diet containing liver and eggs!

The book contains much practical clinical wisdom, however, and will be found interesting and instructive to every physician, regardless of his specialty.

H. W. S.

CONVULSIVE SEIZURES—How to Deal With Them. A Manual for Patients, Their Families and Friends. By Tracy J. Putnam, M.D., Professor of Neurology and Neurosurgery, College of Physicians and Surgeons, Columbia University; Director of Services of Neurology and Neurosurgery, Neurological Institute of New York. 12 Illustrations. Philadelphia: J. B. Lippincott Company. 1943. Price \$2.00.

This is a small book of 168 pages, of convenient size and good print. There are nine chapters, well arranged.

The book is designed so that intelligent laymen may read it understandingly, and also so that the average practitioner of medicine can gain much information. It is brought up-to-date with comment on the latest diagnostic and therapeutic procedures. The author devotes one chapter to legal matters as they concern the epileptic. Contentions and differences in state laws are mentioned, with adverse criticisms. The author also suggests that there should be more institutions devoted especially to the care of convulsive disorders. The title avoids the term epilepsy, which the author does not like. The ancient Greeks used this term for an attack or seizure. The author uses the title, "Convulsive Seizures" and criticizes "epilepsy," yet as all have experienced, he shows that there are no convulsions in many of the types, especially the psychic and some petit mal. Then, if epilepsy signifies an attack or seizure, one has a logical right to the continued use of the name.

A. L. S.

THE PRINCIPLES AND PRACTICE OF WAR SURGERY. With Reference to the Biological Methods of the Treatment of War Wounds and Fractures. By J. Trueta, M.D., Formerly Director of Surgery, General Hospital of Catalonia, University of Barcelona; Assistant Surgeon (E.M.S.), Wingfield-Morris Orthopaedic Hospital, Oxford; Acting Surgeon-in-Charge, Accident Service, Radcliffe Infirmary, Oxford. With Introduction by Owen H. Wangenstein, M.D., Minneapolis, Minn. With 144 Text Illustrations. St. Louis: The C. V. Mosby Company. 1943. Price \$6.50.

This book offers not only an excellent description of the author's method of handling war wounds but also a good discussion of principles of surgery in general.

The early chapters on the history of the beginning of modern surgery and the evolution of surgical techniques up to the present time are interesting to any medical man.

There follow several excellent chapters on wound healing infection, practical bacteriology as applied to surgery, tetanus and gas gangrene. There are good discussions on shock, blood transfusion and anesthesia.

The second part of the book is occupied with a thorough illustrative discussion of the author's method of handling war wounds. This consists of a combination of debridement, as practiced in World War I, and the Orr technic. He does a very thorough debridement and applies plaster of paris directly to the skin and wound, draining with dry or vaseline gauze and relying on the absorbability of the plaster to take up excessive drainage. Sulfanilamide powder is used locally in fresh wounds only.

He has devised ingenious methods of applying plaster in large patterns rather than by roller bandages. His method of handling compound fractures consists of pin or wire traction incorporated into the plaster. A special plate is applied after a few days to the ends of the Kirchner wires so that weight traction can be discontinued and apposition of the fragment maintained in plaster. The plaster in all his cases is not changed for from three to six weeks. He uses his plaster method in not only fracture cases but also in large soft tissue wounds.

His method certainly has a great deal of merit. No doubt his overenthusiasm is justified. He has even

extended his plaster technic to the treatment of burns in conjunction with a modified tannic acid method.

This book is excellently written, concise, thorough and well illustrated. It is a very complete one volume work. It is recommended for military and industrial surgeons especially but general surgeons and any medical man will find it very instructive.

E. K. R.

THE KENNY CONCEPT OF INFANTILE PARALYSIS AND ITS TREATMENT. By John F. Pohl, M.D., Clinical Assistant Professor of Orthopedic Surgery, University of Minnesota; Attending Orthopedic Surgeon, Minneapolis General Hospital; in collaboration with Sister Elizabeth Kenny, Honorary Director the Elizabeth Kenny Clinics of Australia; Honorary Director the Elizabeth Kenny Institute, Minneapolis; Guest Instructor, University of Minnesota Medical School; with a Foreword by Frank R. Ober, M.D., President, The American Orthopedic Association. 368 Pages, 114 explanatory photographs. Minneapolis and Saint Paul: Bruce Publishing Company. 1943. Price \$5.00.

This is a book of 355 pages devoted essentially to an explanation and description of the Kenny treatment. There are numerous illustrations showing the practical application of the treatment. There is a foreword by Frank R. Ober, M.D., a statement by Basil O'Connor, and a preface by Sister Kenny; also a commentary by Miland E. Knapp, M.D. In addition to the introduction and the commentary, the book is divided into three parts: Part I—The Acute Stage; Part II—The Convalescent Stage; Part III—The Chronic Stage. These deal fully with the descriptions of the various stages and the methods of treatment. The illustrations clarify the methods.

Dr. Knapp's commentary is worthy of notice. He tells that many of the phenomena noted by Sister Kenny have not as yet been explained. He tries to give a logical explanation and states that, in order to really understand the pathologic changes, much research must be devoted to infantile paralysis.

This book is a good exposition of the Kenny treatment, up to the present, and should be valuable to all who are interested in the treatment of infantile paralysis.

A. O'R.

ESSENTIALS OF INDUSTRIAL HEALTH. By C. O. Sappington, M.D., Dr.P.H., Consulting Industrial Hygienist; President, Central States Society of Industrial Medicine and Surgery; Editor of "Industrial Medicine." 63 Illustrations. Philadelphia: J. B. Lippincott. 1943. Price \$6.50.

Dr. Sappington has succeeded in this latest book in developing a very broad consideration of industrial health, laying particular stress on its preventive aspect and public health application. Such subjects as industrial hygiene, toxicology, sanitation, mental hygiene, job analysis, workmen's compensation and rehabilitation, occupational diseases and accidents and many other of the most recent problems concerned with Industrial Health are adequately covered. He quite properly leaves the teaching of traumatic surgery to the hospital or clinic.

The author has incorporated some excellent tables and summaries supplied by the American Medical Association, College of Surgeons, Public Health Association, various trade associations and governmental agencies.

The various appendices concerning nurses orders, survey forms, respirator classification, lighting standards, absentee recording and various publications by the A.M.A. Council on Industrial Health are very valuable in that they present many useful guides in one text.

This book should prove useful to anyone interested in industrial health.

N. M.

MANUAL OF CLINICAL THERAPEUTICS. A Guide for Students and Practitioners. By Windsor C. Cutting, M.D. Associate Professor of Therapeutics, Stanford University School of Medicine, San Francisco, California. Philadelphia: W. B. Saunders Company. 1943. Price \$4.00.

To cover the field of therapeutics in a manual of this size is an extremely difficult, if not impossible, task. The field of therapy has grown to such dimensions and is so diversified that it is questionable whether or not any individual could utilize or be interested in information which covers the whole field.

The "Manual of Clinical Therapeutics" covers very briefly the therapy of almost everything and is, as a result, inadequate in explicit directions, cautions and such.

There are several interesting appendices which cover special procedures, diet, poisons and methods for controlling therapeutic use of drugs. It is the feeling of the reviewer that this volume might be used as an index pointing to more complete works on therapy. It can hardly be considered adequate as the sole reliance of the physician or student.

R. O. M.

THE 1942 YEAR BOOK OF INDUSTRIAL AND ORTHOPEDIC SURGERY. Edited by Charles F. Painter, M.D., Orthopedic Surgeon to the Massachusetts Women's Hospital and Beth Israel Hospital, Boston. Chicago: The Year Book Publishers. Price \$3.00.

This small volume is one of the twelve comprising the practical medical series of Yearbooks founded in 1900 and published continuously since.

It is in two parts. Part I takes up consecutively tuberculosis of bones and joints, osteomyelitis, paralyzes, chronic arthritis and gout, benign and malignant tumors, congenital defects and pathologic conditions, lesions of the upper extremity, lesions of the spine, fractures and traumatic dislocations, operative technic, diagnostic procedures and miscellaneous orthopedic and traumatic conditions.

Part II is devoted to industrial surgery and includes general conditions, diagnosis and prevention.

The 302 illustrations are from x-rays, photographs, drawings and tables.

The editor has endeavored to include the various subjects of interest to orthopedic and industrial surgeons so that the book will be not only interesting but informative of the best and newest, as published in the different journals here and abroad.

In Part I somewhat more than the usual space is given to war injuries, as it should be at this time, while in Part II particular attention is devoted to industrial health and accidents resulting from the increased amount of heavy work plus the hurry to get it done. Also are discussed compensation laws, educational needs, hypertension in workers past 40, chemical gas and other poisons.

Altogether the publication seems much worth while.

C. A. S.

UROLOGY IN GENERAL PRACTICE. By Nelse F. Ockerblad, B.S., M.D., F.A.C.S. Professor of Clinical Urology, University of Kansas School of Medicine; Senior Attending Urologist to St. Luke's Hospital; Consulting Urologist to the Children's Mercy Hospital, Kansas City, Mo.; Diplomate of the American Board of Urology; and Hjalmar E. Carlson, B.S., A.M., M.D., F.A.C.S. Instructor in Urology, University of Kansas School of Medicine; Attending Urologist to St. Luke's Hospital and Trinity Hospital, Kansas City, Mo.; Diplomate of the American Board of Urology. Chicago: The Year Book Publishers, Inc. 1943. Price \$4.00.

This condensed work embraces just what the title implies, a practical reference work for the busy practitioner.

Compared with most similar books on special sub-

jects, the authors feature common problems encountered by the man in general practice. While nothing of importance in the field of urology has been omitted, technical details of major procedures (which the general man has no hope of carrying out) have been abbreviated. Thus there is space for a detailed description of such procedures as urethral instrumentation, the technic of catheter manipulation and other minor procedures which often make or break the practitioner's reputation.

One of the most important features is clinical differential diagnosis, revolving about the coordinated evaluation of careful urinalysis, pain symptoms and physical examination.

This work is up-to-date and includes the use of sulfa drugs as well as the particularly revolutionary digest of present day concepts of carcinoma of the prostate.

The busy practitioner will find in this book ready and understandable help for his problems in urology.

C. K. S.

MANUAL OF INDUSTRIAL HYGIENE and Medical Service in War Industries. Issued under the Auspices of the Committee on Industrial Medicine of the Division of Medical Sciences of the National Research Council. Prepared by the Division of Industrial Hygiene, National Institute of Health, United States Public Health Service. William M. Gafaer, D.Sc., Editor. Philadelphia: W. B. Saunders Company. 1943. Price \$3.00.

This excellent volume, concerned with industrial health in all its phases, and particularly in war industries, should prove extremely useful to any physician who is at all concerned with industrial medicine and hygiene. Not only is it timely, dealing with conditions and problems in industry that are occurring today, but it is written in a style which goes into all the essential details without being too lengthy, thus saving the valuable time of a busy physician.

Of equal importance, the book contains excellent bibliographies on many of the subjects dealt with to which the reader can refer if he so desires.

The chapter on "Available Services in Industrial Hygiene" should prove very helpful, telling the reader exactly where to go for additional help in the solution of his plant problems.

There are several valuable tables concerned with recommended standards which are helpful in answering the question of how much or how many.

This book adequately fulfills the objective as expressed by Dr. J. G. Townsend, Medical Director of the Division of Industrial Hygiene of the National Institute of Health, in his preface, which is to make available a book on industrial hygiene which is small enough to give compact knowledge, yet large enough to cover the entire subject.

N. M.

PRIMER OF ALLERGY. A guidebook for those who must find their way through the mazes of this strange and tantalizing state. By Warren T. Vaughan, M.S., M.D., Richmond, Virginia. With Illustrations by John P. Tillery. Second Edition. St. Louis: The C. V. Mosby Company. 1943.

This book is written for the laity. It presents the elementary principles of allergy metaphorically and, in an entertainingly brisk style, enlivened by caricatures and by the apt cartoons of H. T. Webster, it shows the application of these principles in the diagnosis and treatment of diseases based on allergy. There is also miscellaneous information such as general directions for patients with pollen hay fever and pollen asthma, with allergic eczema and other allergic diseases; directions for avoiding feathers; removal of house dust; avoidance of egg, milk and wheat in the diet; manner of keeping dietetic diaries. A section with the questions usually asked by patients and their answer is also included.

The information in this book is proper and should give the patient the insight to understand and to aid his physician.

C. H. E.

DISEASES OF THE SKIN. By Oliver S. Ormsby, M.D., Rush Professor of Dermatology, University of Illinois; Attending Dermatologist to the Presbyterian Hospital of Chicago; and Hamilton Montgomery, M.D., M.S., Associate Professor of Dermatology and Syphilology, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, Rochester, Minnesota; Associate in Section on Dermatology and Syphilology, The Mayo Clinic. Sixth Edition thoroughly revised. With 654 Figures containing 723 Illustrations and 6 Colored Plates. Philadelphia: Lea & Febiger. 1943. Price \$14.00.

Co-authors, Ormsby and Montgomery, have just presented the profession with their new volume, "Diseases of the Skin." Exclusive of the index, the work covers thirteen hundred and thirty pages. Much attention has been given to revision. Thus, a new and valuable text is offered to teachers, students and practitioners. Quoting from the preface: "The authors have regrouped a large number of diseases, added two new classes, eliminated much material rendered obsolete through recent discoveries, added twenty-two diseases not previously described in this text, and rewritten many others." Order and forcefulness is evident throughout, a feature most enticing to the student. The grouping, under "General" heads, Symptomatology, Etiology, Pathology, Diagnosis, Prognosis, and Treatment adds versatility and clearness.

A plea is made for careful mastery of all these "General" heads. Chapter III on Symptomatology deserves especial attention; its arrangement and discussion are both clear and logical. Following the head of elementary (or primary) lesions, every type of skin manifestation is given a most comprehensive description. Under Etiology, generous space is given to some of the newer phases such as experimental anaphylaxis, desensitization, allergens and reagins.

The section on Syphilis, alone, comprises seventy-eight pages, enriched by forty-five photographs and micrographs. The entire field of treatment is revised; the desirability of each method is carefully evaluated; every indication and contraindication is set forth in such a way that those studying syphilis or teaching syphilology may choose his own method of procedure. Emphasis is placed on the adaptability of the arsenicals and metals. Silver-arsphenamine and bismarsen are therapeutically considered. Massive arseno-therapy in early syphilis by continuous intravenous drip method receives its share of the discussion. In conclusion, the authors offer this very important prognosis: "In cases where efficient treatment is given before generalization occurs and before Wassermann test is positive, the disease is usually entirely eradicated."

In brief, as we pass through the pages of this book, we find that old methods and old theories have given way to newer ones. The field of dermatology has been amplified by valuable discoveries of heretofore unclassified entities and many more clearly defined.

Thus, a new book greets the shelves of medical libraries. It might fittingly be called "The War-Time Text." No pains have been spared to make the undertaking excel. From cover to cover are seen the results of voluminous effort in placing before the medical reader this outstanding story of the diseased human skin. E. P. M.

WAR MEDICINE. A Symposium. Editor, Winfield Scott Pugh, M.D., Commander, (M.C.) U.S.N., Retired, Formerly Surgeon, City Hospital, New York; Associate Editor, Edward Podolsky, M.D.; Technical Editor, Dagobert D. Runes, Ph.D. New York: Philosophical Library. 1942. Price \$7.50.

News commentators, the press, the radio, periodicals of a general and technical character constantly impress one with the rapidity with which the present war progresses, constantly inform one of the increased effectiveness of the instruments of war in use in the present

struggle. "War Medicine" is a valiant effort on the part of its editor and all its many well known contributors to inform the medical personnel, both civilian and military, of the problems with which they are confronted, the rapidity with which they must be dealt and the most modern effective methods of handling them. Not a phase of the medical aspect of this holocaust is left untouched. The soldier, the sailor, the aviator, the submariner and the civilian alike—all present their problems of casualties, health and hygiene incident to their mode of life and all are dealt with in this symposium. World War II in its problems of supply, strategy, rapidity of action, type and effectiveness of forces and multiplicity of scenes of action has been incomparable to World War I. So, also, this type of global warfare has outmoded many of the medical usages and technics in vogue in World War I. Medicine in time of war has been forced to meet new problems with new methods and has met them rapidly and efficiently.

The contributors to this symposium comprise men well known to medicine, many contributing accounts of invaluable experience gained in the last war, many experts in their highly technical fields of plastic surgery, thoracic and skull surgery, submarine and high altitude problems; many presenting the ever increasing neuropsychiatric problems. Other fields all too numerous to mention are covered adequately.

The articles covering the field of military surgery, huge as it is, deal with the discussions of the anatomy, physiology, pathology and bacteriology involved, together with the peculiarity of the types of wounds produced depending upon the inflicting missile, the immediate, the definitive and convalescent care of the surgical patient. Modern war methods of the use of the sulphanyl derivatives and vitamins in promotion of wound healing, and the use of blood substitutes are discussed. The characteristics of the previously unheard of and bizarre types of injury due to blast concussions—both in military and civilian personnel, the uncommon types of exposure, e.g., immersion foot, the place of allergy as it plays a part in modern war—all are found here. The medical problems presented by the Selective Service Act are adequately dealt with.

Problems of treatment are presented with precision and conciseness so that the reader may put them to practical use with relative ease and not have to sift the theoretic from the practical. The majority of the articles, however, confront the reader with sufficient bibliography if he cares to pursue his particular field further.

For the reviewer to attempt to discuss in detail any particular field of the medical problem as presented in this symposium would only detract from the remainder. Suffice it to say that "War Medicine" deals with some phase of every physician's daily duties, be they civilian or military. P. L. B.

ENDOSCOPIC PROSTATIC SURGERY. By Roger W. Barnes, M.S., M.D., F.A.C.S., Professor of Clinical Urology, College of Medical Evangelists; Chief of Urology Service, White Memorial Hospital and Out Patient Clinic; Senior Attending Surgeon, Los Angeles County Hospital; Consulting Urologist, Glendale Sanitarium Hospital, Glendale, Harriman Jones Clinic Hospital, Long Beach, Southern Pacific Company, Associated Oil Company, Los Angeles Railway Company, and Los Angeles County Farm. With 104 Illustrations. St. Louis: The C. V. Mosby Company. 1943. Price \$6.00.

This is a most timely and well prepared monograph of great value to all students of operative urethroscopy, frankly and fearlessly discussing both satisfactory and unsatisfactory results from transurethral prostatic resections.

Chapter 10 is one of the finest descriptions relative to a highly technical procedure which any one interested in endoscopic surgery can assimilate. The reader, if

a cystoscopist, can actually walk into the room, and assume the position of Dr. Barnes on the stool and step by step proceed in the matter of a prostatic resection. He has recognized, anticipated and graphically analyzed all of the resectionist's difficulties. The author briefly acknowledges the female urethral pathology which could require transurethral resection, and by inference suggests such to be feasible. Recent contributions by A. I. Folsom of Dallas, Texas, shows that prostatic glandular structures have been acknowledged and partial, also complete, urine retentions have occurred and been relieved by resections.

Chapter 13, unlucky number, was well chosen to head the topic "Immediate Complications." Certainly it is "no disgrace to run when you are afraid," but only when such accidents are unrecognized should any serious results occur, and that the man who has not encountered them and corrected same, probably never was honest with himself.

Another of the high points is chapter 4, dealing with the examination of the patient. Physicians who have cases referred for prostatic resection appreciate such a chapter since a "big prostate" is not the only cause for urinary symptoms nor does the size of the gland indicate the need for resection. Such a chapter should be presented to the man in general practice. The chapter which follows brings out concisely the conditions which are indications for resections.

The closing chapter is befitting as regards "Results and Sequelae." This should be studied carefully and then always included in one's discussion to the prospective patient. Too frequently such cases present themselves "over-sold" and "understudied." Therefore, they know not what to expect nor how to be tolerant with an incomplete or unsatisfactory result, not the fault of the resectionist.

This volume certainly should be valuable to the medical student and invaluable to the intern, also resident, as well as to the urologist himself as it does make one think and admit the merit of frankness. R. L. H.

ABDOMINAL AND GENITO-URINARY INJURIES. Prepared under the Auspices of the Committee on Surgery of the Division of Medical Sciences of the National Research Council. Illustrated. Philadelphia and London: W. B. Saunders Company. 1942. Price \$3.00.

There are six of these manuals which were prepared under the auspices of the committee and are planned to be a condensed essence of the fundamental knowledge in the various surgical specialties as they relate to military surgery. This little book is very well prepared.

Part one comprises eleven chapters on abdominal injuries which are well illustrated and present in an orderly manner the best type of management of abdominal injuries, including their diagnosis, preoperative care, operative care, and postoperative management as well as the type of operation which should be selected, the anesthetic and the complications which may arise. The treatment of the various types of abdominal trauma are dealt with in an authoritative manner.

Part two consists of six chapters on injuries to the urinary tract which have been prepared by a group of eminent urologists and include the names of Herman L. Kretschmer, Chairman of the Committee, William F. Braasch, Homer G. Hamer, Frank Hinman, Oswald S. Lowsley, Albert J. Scholl, as well as Clark M. Johnson and H. M. Weyrauch. There is considerable emphasis on diagnostic procedures and these are explained in a very clear and detailed manner. Particular emphasis is laid on renal and ureteral injuries as well as the treatment of crushing injuries to the kidney. One very important chapter deals with the discussion on the care of the paralyzed bladder. This volume is an excellent contribution to the knowledge of this subject and should be in the library of every up-to-date surgeon. N. F. O.

A MANUAL OF OTOLARYNGOLOGY, RHINOLOGY AND LARYNGOLOGY. By Howard Charles Ballenger, M.D., F.A.C.S., Associate Professor of Otolaryngology, Northwestern University School of Medicine, Chicago, Illinois. Surgeon, Department of Otolaryngology, Evanston Hospital, Evanston, Illinois. Second Edition, Enlarged and Thoroughly Revised. Illustrated with 114 Engravings and three color plates. Philadelphia: Lea & Febiger. 1943. Price \$4.00.

This is a manual of over three hundred pages designed to teach medical students and general practitioners the essentials of otolaryngology. The work is arranged in four parts: (1) The Nose and Accessory Sinuses, (2) The Pharynx and Fauces, (3) Diseases of the Larynx, (4) The Ear. The volume contains thirty-six chapters. The text is well written and clear and is illustrated by numerous engravings.

Careful study of this work gives one a broad knowledge of otolaryngology, except for surgical technic. Most of this rightly belongs to a larger book for specialists. However, since tracheotomy is frequently an emergency procedure, it is added to this edition. Medical treatment in otolaryngology has a prominent place in this book and, altogether, the book is a practical guide for what the general physician may expect to do in this field. H. H. B.

YOUR ARTHRITIS. What you can do about it. By Alfred E. Phelps, M.D. With an Introduction by R. Garfield Snyder, M.D. Illustrations by James Macdonald. New York: William Morrow and Company. 1943. Price \$2.00.

Arthritis disables and cripples more persons than any other chronic disease. In spite of that fact few beds are available for treatment and clinic and research facilities are extremely limited. Phelps has prepared this book for the patient who needs advice to supplement that which can be given during office or clinic visits.

It is obviously a difficult job to prepare such instruction suitable for all patients. There are so many types of arthritis that the particular patient can find only a part of the book applicable to him. However, it is just as well that the patient appreciates the problem as a whole. Emphasis throughout seems to be placed on the hypertrophic form and probably this is the type of patient who will receive most benefit from the book. The chapters on posture and gait, prevention, and diet are particularly useful.

It is a readable book and written simply; comprehensible to any average adult.

Arthritis sufferers need education and this book should help do this. H. L. M.

ATLAS OF OBSTETRIC TECHNIC. By Paul Titus, M.D., Obstetrician and Gynecologist to the St. Margaret Memorial Hospital, Pittsburgh; Secretary, American Board of Obstetrics and Gynecology. Illustrations by E. M. Shackelford, Medical Illustrator, John C. Oliver Memorial Research Foundation, St. Margaret Memorial Hospital, Pittsburgh. St. Louis: C. V. Mosby Company. 1943. Price \$7.00.

This is a surprise volume, surprising in format and idea, surprising in excellence of detail, surprising in the amount of information supplied. It follows Beck's origination of complete use of line drawings to reduce cost. At the same time the line drawings are so excellently and carefully made that the Atlas furnishes good teaching by visual means. Space is furnished for additional notes by the reader.

It may be used as a supplement to the usual textbook of obstetrics which perforce has omitted some phases of technic.

The text is brief and packed with abbreviated maxims. It is handy, pleasing and up-to-date. A. B. S.

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TWO HUNDRED DELIVERIES UNDER LOW SPINAL ANESTHESIA

MAJOR BERT H. KLEIN, M.C.

ST. LOUIS

Low spinal anesthesia of 50 mg. of novocain crystals in the fourth lumbar interspace has been used with gratifying results in 200 of a series of 310 consecutive deliveries during the last two years. There were no maternal deaths nor were there any "close calls." A few patients complained of a minor headache which was relieved easily with aspirin. The fetal mortality was less than 2 per cent and had no relation to the type of anesthesia used. In spite of the antagonism to and condemnation of this method of delivery by such authorities as Fluhmann,¹ Montgomery² and Greenhill,³ it is felt that in selected cases it is definitely a method of choice.

Although it does not offer the completely painless labor described by Hingson and Edwards⁴ for continuous caudal anesthesia, this technic has the same advantages at the time of delivery. In addition, it is a bit less difficult to administer, anesthesia obtains more rapidly and the number of failures in obtaining anesthesia is reduced, there being no failures in this series of cases.

The most opportune time to give the anesthetic was found to be after effacement had taken place. In primiparas it is preferable to wait until the cervix is from 6 to 8 cm. dilated. In multiparas it can be given somewhat earlier. To those doctors who object to being with their patients at this slightly early stage, I might add that spinal anesthesia can be given in place of a general in the very final stage of labor. The duration of the spinal anesthesia was found to be at least one hour in the perineal region and in some cases as long as one and one-half hours. In the large majority of these cases the patient retained the voluntary control of the muscles of the legs but no sensation below the level of the iliac crests.

TECHNIC

The technic is quite similar to that described by Waters.⁵ The patient is placed on her side and the

knees flexed moderately on the abdomen, care being taken not to exert undue pressure on the baby. The head is flexed on the chest. After the lumbar area of the back is treated with an antiseptic solution, the fourth lumbar interspace is located and a wheal is raised with 1 per cent novocain. Following this a 22 gauge spinal needle is introduced into the subarachnoid space and 1 cc. of spinal fluid is withdrawn. This is used to dissolve 50 mg. of novocain crystals. This solution is then injected into the subarachnoid space without barbotage.

The entire procedure can be carried out within a matter of three or four minutes. The small gauge needle facilitates entry into the spinal canal with the patient in the semiflexed position obtainable under the conditions at hand with the protuberant abdomen. Anesthesia is almost instantaneous, the patient having usually one and occasionally two more pains after the injection. She is turned immediately on her back and placed in the lithotomy position with the spine in a horizontal plane, the head and lower spine on the same level. By the time this change in position has been accomplished even the most apprehensive patient has begun to relax and becomes quite content. From this stage on she is encouraged to breathe deeply at frequent intervals in an effort to supply the baby with a maximum of oxygen as well as to stimulate the maternal circulation of blood.

The perineum is cleansed with green soap and an antiseptic solution is applied. Due to the fact that contractions of the uterus continue unabated, and the vaginal tract is completely relaxed, the presenting part usually descends rapidly and crowning is observed in most cases less than 30 minutes after the spinal anesthesia is administered. Delivery was accomplished in most cases by means of an episiotomy and outlet forceps. In several instances spontaneous delivery was permitted primarily to demonstrate that the uterine contractions were capable of accomplishing delivery without the necessity of voluntary contraction of the abdominal muscles. Obstetric maneuvers, such as rotation or version and extraction, are carried out much more easily with spinal anesthesia because of the complete relaxation of the perineal muscles.

Labors were relatively short, being an average of 6.2 hours in the cases delivered under spinal anesthesia. Very little analgesia was used to suppress pain in the majority of these cases prior to the spinal injection. This, and the fact that the patient received no inhalation anesthesia, is probably responsible for lack of asphyxia of the newborn encountered in this series. The great majority of infants breathed prior to the delivery of the shoulders. Kotz and Kaufmann⁶ have shown that sedatives and general anesthesia are responsible for asphyxia of the newborn in relation to the amount given and the length of time over which administration takes place.

The average drop in systolic blood pressure was 10.2 mm. with a maximum drop of 30 mm. in one very apprehensive patient. The average drop in diastolic pressure was 11.7 mm. with a maximum drop of 24 mm. Spinal anesthesia was not employed in any case in which the systolic pressure during labor was less than 110 mm. In borderline cases 5 minims of neosynephrin hydrochloride were given subcutaneously. In these instances the pressure dropped very little and not infrequently a rise was noted.

Although no exact method of measuring the amount of blood loss was worked out, it is reasonably accurate to say that the average was less than 4 ounces. Hemorrhage necessitating packing of the uterus was encountered in only three cases of the total series. Two of these patients had received drop ether anesthesia and the third case bled on the fifth postpartum day, having been delivered under spinal. This same patient gave a history of having hemorrhaged with a previous delivery under general anesthesia. There was no alarming bleeding in any case during the time the spinal was effective.

Mothers who have had this type of delivery are its most enthusiastic exponents. The ones who are most appreciative are those who have had the unpleasant experience of a general anesthetic or an unsuccessful perineal block with a previous delivery. Former nurses delivered under spinal were among the most pleased patients.

Advantages of low 50 mg. spinal anesthesia for delivery are thought to be numerous. As evidenced by this series of cases they are enumerated as follows:

1. Technical difficulties associated with administration are reduced to a minimum.
2. Due to the relaxation of the lower uterine segment and the vaginal canal the length of labor is definitely shortened.
3. There is no interference with the vital mechanisms of the child as seen with general anesthesia.
4. Delivery of the placenta and involution of the uterus are not retarded.
5. Obstetric maneuvers, such as rotation of occiput posterior presentations, are carried out with greater ease and less danger to the child. Breech deliveries are made infinitely less tedious.

6. Blood loss is no greater than with general anesthesia. In most cases there is probably less blood loss.

7. Postpartum complications are reduced to a minimum. In this series of 200 spinal deliveries it was found necessary to catheterize only one patient, while several of the patients who had been given general anesthetics had to be catheterized. There were no postpartum infections in either group.

CONCLUSION

As a result of 200 deliveries under low spinal anesthesia of 50 mg. of novocain crystals in the fourth lumbar interspace with no maternal mortality and negligible morbidity, and a fetal mortality in no way connected with the anesthesia, it is felt that in selected cases this method is safe.

This series of cases has now reached a total of 448 deliveries with 322 of them spinal deliveries. The results have continued to be most satisfactory.

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NONPARASITIC CYSTS OF THE LIVER

A REPORT OF TWO CASES AND AN ANALYSIS OF THE LITERATURE

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AND

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The comparative rarity and uncertain etiology and pathogenesis of nonparasitic cysts of the liver make the following two case reports of some interest.

REPORT OF CASES

Case 1. L. R., white female patient, age 60, was admitted to the Firmin Desloge Hospital, December 27, 1935. She complained of a swelling in the right upper part of the abdomen, weakness, loss of weight and indigestion.

She had known of the mass for the last year but two weeks prior to admission she began to enlarge rapidly. There was pain of a sharp character which radiated to the shoulder. The dyspepsia was of a qualitative type and there was no vomiting and no jaundice. Constipation had been present for the last six months. There were chills and fever during the three days prior to admission. The past history and family history were unimportant. On physical examination, the patient appeared to be an elderly, emaciated female. The head, heart and lungs revealed no abnormalities. The abdomen presented an ovoid swelling, 5 by 7.5 cm., in the right upper quadrant of the abdomen. The mass was tender, fluctuant and only slightly movable. The

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liver edge was palpable 3 cm. below the right costal margin. The temperature was 98 F., the pulse 72 and blood pressure 130 mm. of Hg. systolic and 70 mm. of Hg. diastolic. On laboratory examination, the urine was essentially normal and the blood showed 7,800 leukocytes, 4,700,000 erythrocytes and hemoglobin 12.5 gm.

The differential count was normal and the Kline test negative. The nonprotein nitrogen was 27 mg. per cent and the blood sugar 85 mg. per cent. Radiograph of the chest revealed a bilateral apical tuberculosis. Roentgen ray examination of the stomach resulted in normal findings except for considerable ptosis. The second part of the duodenum was displaced posteriorly and the hepatic flexure downward. There was no gastric retention but there was delayed motility of the colon. The mass in the right upper quadrant from a roentgen ray standpoint seemed attached to the liver. The roentgen ray diagnosis was malignancy of the liver.

A clinical diagnosis of hydrops of the gallbladder was made. Exploration was advised and on January 6, 1936, a thick-walled cyst of the liver was encountered in the middle of the right lobe of the liver. It was aspirated and found to contain from 400 to 500 cc. of clear, odorless, colorless fluid. Exploration showed the other abdominal viscera normal. The cyst was then incised and packed with iodoform gauze and the abdomen closed about the pack.

Bacteriologic examination of the cystic fluid was negative. The cyst fluid on chemical examination showed chlorides 670 mg. per cent; cholesterol none, sugar 62 mg. per cent, plasma protein none, nonprotein nitrogen 16 mg. per cent, total protein 220 mg. per cent and albumin a trace. The pack was removed gradually and the wound healed completely. The patient was discharged on February 5, 1936.

Case 2. J. M. Mc., female, aged 32, was admitted to the Firmin Desloge Hospital on October 18, 1937. She complained of a painless mass in the right upper part of the abdomen which had been discovered accidentally one month prior to admission. There was no history of gastrointestinal disturbance but she had been constipated for many years. There had been no loss of strength and weight and her past health had always been good except for a chronic cough, dyspnea and occasional attacks of epistaxis.

On examination, the patient appeared to be an elderly woman, well preserved for her years. The lungs were essentially normal but the heart was enlarged slightly to the left and there was a systolic murmur at the

apex. On inspection of the abdomen, a tumefaction about 6 cm. by 6.5 cm. was evident just below the right costal margin (fig. 1). The mass was not attached to the skin and was smooth, tense, fluctuant and moved with respiration. It was not tender. The liver margin could not be palpated distinctly but it was thought to be above the mass. The temperature was 99.8 F. and pulse 64. Systolic blood pressure 216 mm. of Hg. and the diastolic 92 mm. of Hg. On laboratory examination, the urine showed albumin graded II and a few pus and red blood cells to the high power field. The hemoglobin was 11 gm. The erythrocyte count was 4,560,000 and the leukocyte count 7,000. The differential was normal. The Kahn test was negative. Investigation of the blood chemistry gave the following results: nonprotein nitrogen 25 mg. per cent, blood sugar 92 mg. per cent, cholesterol 202 mg. per cent. The serum diatase was 43 and 47 units by the Somogyi method. The van den Bergh test was direct, negative, and indirect, immediately negative but delayed positive. The icterus index was 9 and the bleeding and clotting times were within normal limits. An electrocardiogram was made and a diagnosis of sinus arrhythmia, transverse heart, auricular, ventricular and nodal extrasystoles, left axis deviation and myocardial pathologic condition was made. A presumptive diagnosis of hydrops of the gallbladder was made and an exploratory operation was advised.

On November 2, the abdomen was opened under local anesthesia directly over the dome of the tumor and a cyst of the right lobe of the liver was encountered (fig. 2). It measured about 7.5 by 7.5 by 8.5 cm. and was slate gray in color. The liver tissue in the immediate vicinity appeared scarred and atrophic from pressure and the liver margin of the right lobe was sharp edged. The gallbladder was entirely normal. The cyst wall was sutured to the peritoneum and abdominal wound partly closed, leaving at its midpoint an iodoform gauze pack down to the wall of the cyst. Four days later, the pack was withdrawn and the cyst incised and drained. The interior was of a yellowish, white color and contained 180 cc. of dirty, greenish yellow fluid. The inside lining was smooth except for several fibrous bands which formed incomplete compartments at the base. The cyst was curetted gently and packed with iodoform gauze.

The results of chemical examination of the cystic fluid are shown in table 1.

In the noncentrifuged specimen, there were 15 leukocytes, and 20 erythrocytes and about 30 yeast cells to the high power field of the microscope. Bacteriologic examination was made of the fluid but there was no growth on blood agar.

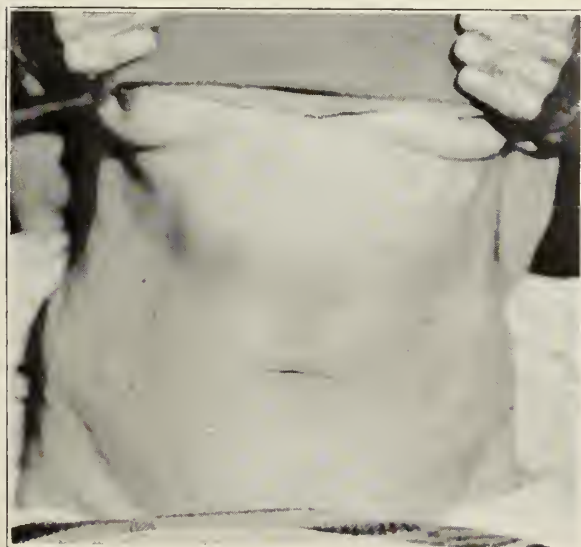


Fig. 1. Photograph showing localized prominence of the abdominal wall caused by the underlying tumor.



Fig. 2. Schematic projection drawing showing the position of the cyst and its relation to the liver.

Table 1. Chemical Analysis of Cyst Fluid

	Case 1	Case 2
Hydrogen ion concentration (ph)		9.0
Urobilin		Negative
Urobilinogen		Negative
Sugar	62 mg. %	Negative
Chlorides	670 mg. %	430 mg. %
Globulin		1.05 gm. %
Albumin	Trace	1.68 gm. %
Protein nitrogen	220 mg. %	2.73 gm. %
Nonprotein nitrogen	16 mg. %	50 mg. %
Total Nitrogen		487 mg. %
Diastase		10 units
Bilirubin		Faint trace
Indirect van den Bergh		Faintly positive
A-G ratio		1.6
Cholesterol	None	
Bacteria	Negative	Negative
Leukocytes		15 per h.p.f.

(Non centrifuged specimen)

A piece of the cyst wall was removed at the time of operation and sent to the laboratory for examination (fig. 3). The pathologist reported a massive inflammatory reaction of small lymphocytes, eosinophils and fibrocytes. The capillaries were superficially hemorrhagic and beneath the hemorrhagic lining the base of an occasional tubular gland was seen. At one point on the inner wall a single layer of cuboidal epithelial cells was found (fig. 4).

The patient pursued an uneventful course after operation and within four weeks the cyst was entirely healed. She was discharged from the hospital on November 29, 1937.

COMMENTARY

A number of classifications of nonparasitic liver cysts exist, the classification of the nonparasitic varieties being a far more difficult task than that of the parasitic cysts. Sonntag,¹⁹ in 1913, grouped them as follow: (1) blood and degeneration cysts from the breaking down of tumors and gummata, (2) dermoid, (3) lymphatic, (4) endothelial, (5) retention and (6) proliferation cysts. In general, according to Jones,¹¹ in 1921, the following divisions must be considered: (1) Teratomatous or embryomatous cysts: Meckel¹⁶ has reported a postmortem case in which the liver "contained a cavity filled with cartilaginous elements, hair and

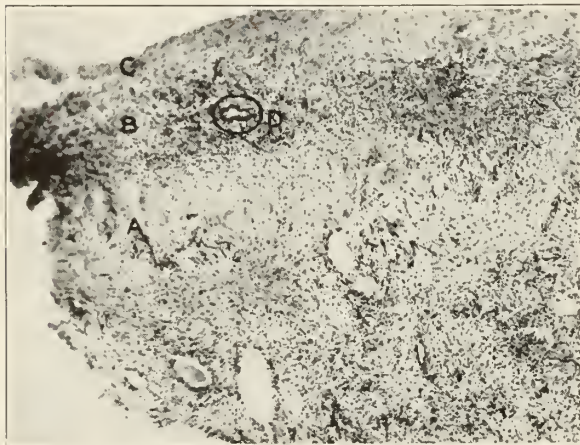


Fig. 3. Photomicrograph of a section of the cyst wall (low power). The zones described by Ackman and Rhea are evident: (A) An inner zone of dense connective tissue but well vascularized; (B) a central zone with less connective tissue cells—numerous blood vessels and lymphatics and well formed bile ducts; (C) an outer zone of loose cellular connective tissue covered by peritoneum; (D) bile duct.

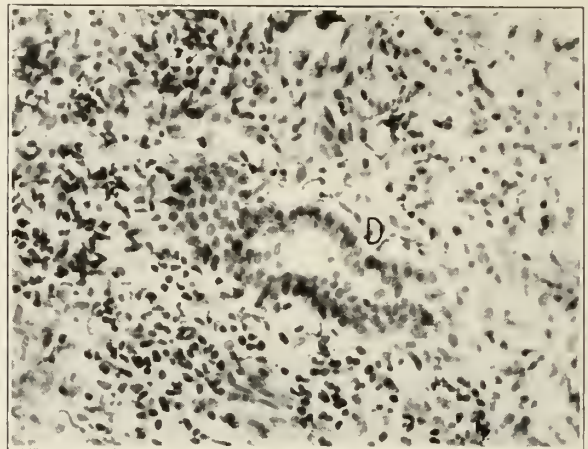


Fig. 4. Photomicrograph (high power) of the bile duct (D) from the cyst wall shown in figure 3.

a greasy, pulpy mass." (2) Pseudocysts: These are mainly cystic degeneration of malignant neoplasms, cirrhotic nodes and cysts of hemorrhagic origin, as that, for example, reported by Lisyanski and Lyndkervich.¹⁵ (3) Lymphatic cysts: Lymphatic cysts of the liver are mainly small and appear to originate from dilation of the lymphatic channels. Recently one of our colleagues (Wimber)²⁵ had a case of a lymphatic cyst which came to operation. The bile elements are absent and the lining wall is composed of endothelium. According to Ziegler they are quite rare. (4) Cystic degeneration of the liver with cystic kidneys: Moschowitz¹⁷ reported eighty-five cases of this type in which the disease was confined to the liver alone in only ten. According to Moschowitz, cystic kidneys without involvement of the liver are common, but cystic disease of the liver is nearly always accompanied by cystic disease of the kidneys. (5) Cysts arising from blood vessels: Little is known regarding these. According to Jones, an autopsy report on a case of cyst of the liver in a patient of John B. Deaver⁸ was diagnosed as hemangioma. Ewing,⁹ in his textbook, also describes hemangioma of the liver. (6) Cystadenoma: Adenomata of the liver, single or multiple, may become cystic. Ewing reports a case of Keen's but these are evidently very rare. (7) Ciliated epithelial cysts: The ciliated epithelial cysts, according to Ewing, are of uncertain origin. They are unilocular, free of bile, generally small and usually located in the anterior surface or along the inferior border of the liver in the region of the suspensory ligament. (8) Retention cysts: This group is by far the largest in the category of the nonparasitic cysts and was the diagnosis made in the case of our own two patients. Retention cysts form the main basis of this study. This condition is believed due to the dilation of the bile duct as a result of obstruction arising, according to Virchow,²¹ from either calculi or cicatrices in a biliary duct. Whatever the cause of obstruction, the subsequent engorgement of the duct from con-

tinued secretion must be an important factor in the production of cysts of this type.

The most recent classification is that of Davis⁵ in 1937. This author described: (1) an inflammatory group wherein the contraction of fibrous tissue about the ducts causes obstruction with biliary stasis and development of pseudocysts or retention cysts, (2) a degenerative group due to trophic tumors and cystic adenomata, (3) developmental cysts from aberrant bile ducts in the fibrous tissue of the portal spaces, (4) teratomatous or embryomatous cysts, (5) lymphatic cysts, (6) ciliated epithelial cysts, (7) congenital obstruction and fatal cholangitis, (8) corset pressure with superficial liver atrophy and cysts, (9) cysts following hemorrhage (traumatic), (10) mucous cysts derived from degeneration of the mucous glands found in the biliary passages. According to Ackman and Rhea,¹ the teratomatous, the lymphatic, the blood vascular, the ciliated epithelial, the cystic degeneration, the bile duct and the retention cysts are congenital; whereas, the degenerative, the cyst adenomatous and those of bile duct origin due to associated hepatic cirrhosis are acquired.

It is difficult to determine, even closely, the entire number of cases reported in the literature. There is a great deal of overlapping in the several collective reviews. In some instances the case is referred to by the name of the surgeon who performed the operation and again by the physician who reported it. In many of the earlier cases, the references are either incomplete or it is difficult if not impossible to secure the original article.

The literature on nonparasitic cysts of the liver consists largely in sporadic individual case records with, from time to time, a review of accumulated reports. For example, Konjetzny¹⁴ reviewed the literature completely to 1910, Boyd³ (1913) reviewed the literature on thirty-four cases of cystic tumor of the liver submitted to operation from 1864 to 1912. He also reported one case of his own. Then, Jones¹¹ (1912) collected and reported sixty cases from the literature as well as one of his own, covering in review the literature from about 1864 to 1922, including again many of the cases found in Boyd's list. Ackman and Rhea,¹ in 1930, reported a case of their own and quoted Muto and Hanzawa¹⁸ as having reported seventy-six cases, sixty-five of them since 1900. Beattie and Robertson² (1932) reported a case of their own and also three additional cases which had appeared since the report of Jones. Davis, in 1937, reporting one case refers to a review of the literature made by himself and published in 1936 in the *Grace Hospital Bulletin*⁶ (Detroit) in which he found 499 cases in all. Of these, 226 were cases operated upon and 273 from autopsy records. Of the total, 187 were solitary cysts, 20 solitary, multilocular cysts, 24 multiple cysts and 51 were not stated. This is a vastly greater number of cases cited by Davis than hitherto mentioned by all previous reviewers. Some conception of the difficulties inherent in

reviewing the literature in this field is evident in the following quotation from Davis.⁷

"In looking over the literature, I discovered that the same cases had been reported two or three different times under different names. . . . I found that some of the articles were originally written in Russian and the same case reported in some other language, the writer being given credit when the original writer should have been given credit. This made shorter lists I read inaccurate. . . . There were also some inaccuracies in the quoted bibliographies and I had great difficulty in getting them correct and keeping them that way. I am sure that there are many case reports about the world, the reports of which I could not obtain."

It does not seem important to repeat much excellent previous work in reviewing literature, but a critical analysis of a selected number of the reported cases of nonparasitic cysts of the liver coming to operation is now timely and would be of considerable clinical and pathologic interest. Our analysis is based upon the complete data obtained from eighty cases which came to surgery. Seventy-three of these cases already have been listed in the collective reviews of others, notably Jones, Boyd Beattie and Robertson and Ackman and Rhea and Davis. The reader is referred to the sources for the specific case references. Seven case reports^{4, 13, 22, 23, 24} have been added to this review by us, including our own two.

ANALYSIS OF DATA ON EIGHTY PATIENTS WITH CYSTIC TUMOR OF THE LIVER SUBMITTED TO OPERATION

1. *Age*.—The oldest patient (our case 2) was 82 years of age, the youngest was 10 months old. The average age was 33 years.

2. *Sex*.—There was a ratio of nearly three females to one male. Of the eighty cases, nineteen were in males, fifty-six were females and in five the sex was not given.

3. *Race*.—Nonparasitic cystic tumors of the liver were found predominantly in members of the white race. Seventy were in white and only three in Negroes.

4. *Anatomic Location of the Cysts*.—The right lobe was by far the favorite site for the development of cysts of the liver. There were fifty-two patients with cystic tumors in the right lobe, eleven in the left and two in the middle. In six, the entire liver was cystic. In nine, the position was not mentioned.

5. *Gross Dimensions of the Cysts*.—The size of these cysts was most often recorded on the basis of fluid content—thirty-eight cases. The smallest amount recorded in this group was 110 cc. and the largest 10,000 cc. The average size was 2,460 cc. In ten cases, the dimensions are given in linear units. The largest was 19 by 16 by 18 cm. and the smallest 4 by 5 by 6 cm. In seventeen of the case reports, the dimensions are compared with such familiar objects as eggs, walnuts, a child's head, watermelons. In fifteen of the cases, the dimensions were not given.

6. *Physical and Chemical Characteristics of the Cyst Fluid in the Several Cases in Which It Was Examined.*—A. Color: The color was recorded as clear or watery in twelve, as chocolate colored in eleven, green in sixteen and straw in fifteen. In twenty-six cases, the color is not stated.

B. In twenty-eight instances, the fluid was found positive for albumin and in one it was reported negative. In fifty-one cases, albumin was either not tested or, if tested, not mentioned.

C. Sugar was reported present in two and absent in eleven cases out of the entire eighty.

D. Bile was found in only nine cases and its absence noted in five.

E. Erythrocytes were mentioned in four cases only.

F. Cholesterin was noted present in four cases and absent in one.

7. *Pathology of Liver Cysts.*—The cysts were said to be solitary in fifty-eight of the eighty cases and multiple in twenty-two. In nine cases, the color of the exterior wall of the cysts was mentioned. It was blue or slate in six, yellow-white in one, blue-white in one and yellow in one. The topography of the exterior of the cysts was mentioned as smooth in five cases.

The inner wall was said to be lined with flat, cuboidal or columnar epithelial cells in twenty cases and with connective tissue without epithelial lining cells in fourteen. In a number of cases, a partial desquamation of the epithelial lining cells was noted. It is possible that in those cyst walls lined with fibrous tissue only a total desquamation of the epithelium had already taken place. Infiltration of the wall with erythrocytes was noted in two cases and with leukocytes in one. The entire wall was described as being composed of three distinct zones of connective tissue in five cases. Liver cells were encountered in the wall of the cysts in four cases and well formed bile ducts were described in ten. An excellent description of the wall of these retention liver cysts from a microscopic standpoint has been given by Ackman and Rhea:

"The wall is composed of connective tissues lined on the inside by a single layer of flat epithelium without cilia. The fibrous tissue wall may be divided in three fairly distinct zones: an inner well-vascularized zone of dense connective tissue cells but with few nuclei; a central zone with less connective tissue cells but with more nuclei, where also may be found numerous blood vessels and lymphatics and likewise a number of well formed bile ducts. The outer zone is of a loose cellular connective tissue with a few elastic fibrils. Over this is a covering of peritoneum."

8. *Diagnosis.*—In diagnosis of nonparasitic cysts of the liver, the most important problem from a clinical standpoint is the differentiation between cyst and nonparasitic cyst. In hydatid disease of the liver, according to most writers, there may be a history of risk of infection. There is, invariably, a gradual enlargement of the abdomen and frequently pain in the right hypogastric region.

Anemia, jaundice and urticaria may be present. An eosinophilia of 5 per cent or more is common. On physical examination, a peculiar fremitus, the hydatid thrill, may be encountered. In old cases, calcification of the mass likely will be noted in the radiograph. If the condition is suspected, a complement fixation test should be made. At operation, the cyst wall is found to be thickened, firm and whitish or gray in color or even calcified if of long standing. On examination of the fluid, afterward, the finding of the hooklets and scoleciasis is conclusive.

The nonparasitic cysts are admittedly very difficult to diagnose before operation. Comparatively few writers appear to have made preoperative diagnoses. In the majority of the cases, the mistaken diagnosis lay either with an ovarian tumor, hydrops of the gallbladder or cystic kidney. The symptoms are the result of pressure on adjacent viscera and may be divided into symptoms from pressure on (a) the gastrointestinal tract with vomiting, obstruction and intestinal pain; (b) the biliary system with obstructive jaundice; (c) portal vein and inferior vena cava pressure with ascites and constipation; (d) the transverse colon with constipation and diarrhea; (e) ureters with hydro-nephrosis and vesical symptoms; (f) pelvis (in females) with menstrual disturbances; (g) displacement of the diaphragm causing dyspnea and cyanosis.

A study of the various symptoms in the eighty cases shows that abdominal swelling was the most frequent complaint (thirty cases). Pain was next in frequency (twenty-one cases). Pain was noted as absent, however, in fourteen patients. Nausea and vomiting were present in eleven, jaundice in eleven and dyspepsia in five. A sense of distressing pressure in the right upper quadrant was present in four, chills and fever in one, cyanosis in one and bladder symptoms in one. Wasting was mentioned in five, constipation in six and diarrhea in one.

There are no physical signs which are truly pathognomonic. A cystic mass is found and fluctuation of a low tension type may be noted on palpation. If localized peritonitis is present, palpable friction may be encountered. The surface of the cyst may be bosselated but often it is smooth. The superficial abdominal veins may be enlarged and elevation of the diaphragm, if present, gives an increased area of hepatic dulness.

On physical examination, tumor was found in all (eighty) cases. It was described as tender in nineteen and not tender in twenty-four. In six there was said to be fluctuation and in one fluctuation was said to be absent. From a clinical standpoint, the establishing of an accurate pathologic diagnosis before operation is not of vital necessity, but the tumor should be dealt with with caution if at operation hydatid disease is suspected.

9. *Treatment.*—The operative procedures employed were noted as enucleation in six, excision on extirpation in nineteen, multiple puncture in

five, incision and drainage (one stage) in twenty-one, excision of the liver lobe containing the cyst in four, aspiration and drainage in three, aspiration and marsupialization in two, partial excision and marsupialization in eight, marsupialization in two stages in nine, anastomosis with the duodenum in one and in two the method of treatment was not mentioned.

The treatment of liver cyst by operation is indicated. The technic of handling liver cysts varies with the type, whether parasitic or nonparasitic; the size, whether small or huge; the number, whether solitary or multiple, and the extent to which the cyst is buried within the parenchyma of the liver. A cyst attached to the liver by a pedicle may be extirpated with little trouble whereas attempts at enucleation of a large deep seated cyst may produce fatal hemorrhage or shock. The question of whether or not operation should be performed in one or two stages depends on the individual case. If it is certain that the cyst is not hydatid (the smooth, blue dome types speak for the non-parasitic forms) and if there are no other complicating factors such as perforation, torsion or infection of the cyst fluid there can be no objection to immediate incision and drainage followed by partial excision of the walls of the cyst to remove as much of the secreting surface as possible and then suture the remnant of the sac to the parietal peritoneum (marsupialization). The sudden decompression, however, of a very large tense cyst probably is fraught with the same dangers of shock and hemorrhage as is the case in the evacuation of huge ovarian cysts. Multiple punctures, tapping or aspiration should be avoided. Curettment of these cysts is said to be dangerous because of the possibility of causing a serious hemorrhage (Kilvington). The excision of all or part of the liver lobe containing the cyst has been successful in a number of cases, notably in Von Haberer's case in which the whole of the left lobe containing the cyst was successfully resected.

In table 2, an attempt is made to give a correlation of the type of operation with the result obtained in a somewhat larger group. This includes, in particular, a number of cases cited by Davis.

Table 2. *Correlation Between the Operation Employed and the Results Obtained in 132 Cases of Nonparasitic Cysts of the Liver*

(By various authors)

Operation	Total No. of Operations	Recov- ered		Recurred No.	Death	
		No.	Per Cent		No.	Per Cent
Aspiration*	28	12	42.9	1	16	57.1
Excision	29	24	82.2		5	17.2
Drained	16	13	81.3		3	18.7
Marsupialization	11	9	81.9		2	18.1
Packed	2	2	100.0	1		
Various combinations of above procedures, i.e., partial excision, drainage, marsupial- ization, aspiration and packing	46	38	82.6		8	17.4
Totals	132	98	74.2	2	34	25.8

*Corrected mortality 17.3 per cent excluding cases treated by aspiration.

It is apparent, from this table, that of all methods aspiration is the most dangerous. The numbers are, of course, too small to have any real statistical value, but the figures do indicate, to some extent, the great variety of operative procedures used as well as the relative merits of each.

In the postoperative management, particularly in cases in which the cyst has been opened and evacuated either as a one stage or two stage procedure, the surgeons have, in most instances, packed the cavity with gauze. The pack is then withdrawn slowly and the cavity gradually collapses. In the cases in which the cystic fluid is infected at operation or becomes infected later, adequate drainage must be provided and secure walling off from the general peritoneal cavity maintained. Boyd³ refers to an unfortunate mishap which occurred during convalescence. The cyst had become infected after operation and on one occasion as the cavity was being irrigated with a weak hydrogen peroxide solution the patient complained suddenly of severe pain, a small hemorrhage occurred from the sinus and the patient rapidly developed peritonitis and died. It was suggested by Boyd that the gas, unable to escape readily through the contracted sinus, had, by its pressure, either ruptured or torn the cyst away from the abdominal wall.

10. *Prognosis.*—The complications of nonparasitic liver cysts are (1) perforation with peritonitis, (2) hemorrhage, (3) inflammation of the cyst, (4) torsion of a pedunculated cyst. The cause of death may be said to be due to rupture, torsion, wasting, destruction of liver function and supuration. Davis⁶ in his comprehensive survey of the literature (499 cases) found 226 operative cases with a mortality of fifty or 22.12 per cent. In the group of eighty cases analyzed in this paper, sixty-five of the patients recovered and, of these, five had persistent sinuses. In one, the cyst wall had already ruptured at the time of operation, but the patient recovered. There were fifteen deaths, a mortality of 23.07 per cent.

RESUME

Two cases of retention cyst of the liver are reported and an analysis made on data from eighty cases of nonparasitic cysts of the liver selected from the literature.

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PRURITIS ANI ASSOCIATED WITH MENSTRUATION

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When one reviews the literature on pruritis ani et vulvae and notes the conflicting opinions in regard to etiology and treatment by prominent men of the profession, he becomes skeptical and wonders if there is really any definite knowledge of effective care for this very disturbing skin disorder. Of course, these different opinions prove that there is different etiology and different treatment, most of which have proved successful in certain hands and in certain cases.

To quote some of these opinions, Norman¹ supported the hypothesis that most pruritis ani could be cured or satisfactorily relieved with dietotherapy. He states: "True pruritis ani is almost invariably associated with a nameable constitutional disease or disorder, mostly faulty or improper nutrition." In his opinion, the several surgical measures which now are being advocated for the relief of pruritis ani are not justifiable until every intelligent medical measure known to science has failed. Undoubtedly, there are cases which will resist all medical treatment and these cases can do no more than to submit to surgical procedures. In its chronic form, pruritis ani is a nerve wrecking, serious condition which is unresponsive to local treatment, per se.

Hailey and Hailey² state: "Pruritis ani et vulvae" is a phrase which designates the subjective symptoms of a disease of the skin. Many patients become mental and physical wrecks and acquire advance changes in the skin before they present themselves for help."

Bacon³ states: "The value of surgery in the treatment of pruritis is indeed problematical."

Hirschmann⁴ says: "I do not believe that there is such a thing as idiopathic pruritis ani." Also he said that some cases had been reported in which the itching had been aggravated by an operation.

Buie, Barga and Rankin⁵ said: "Pruritis ani is a disease." They recommend injections of alcohol for treatment and state further that: "In fact, the tissues must slough or the relief of itching will be incomplete." This is verified also by Crossen (Gyn) and Lahey.⁶

Stone⁷ observed 200 patients, few of whom were permanently cured with alcohol. Some were relieved for a period of years although the majority had a return of symptoms in from six to twelve months.

Montague⁸ expressed the opinion that anorectal diseases are primarily responsible for the majority of cases. He also blamed menopause in an appreciable number of cases.

Schafer⁹ in 40 cases of severe menopausal and postmenopausal pruritis considered estrogenic insufficiency the etiologic factor. He advocated general and local treatment, including administration of estrogens, roentgenotherapy and, as a last resort, gynecologic surgical operation.

Knowles and Carson¹⁰ used autogenous vaccines of streptobacillus faecalis and reported fair results.

Castellani¹¹ stressed the importance of fungus infections in pruritis ani et vulvae.

From the surgical standpoint Frankenthal¹² claimed successful treatment by excision of the involved skin and resection of the perineal nerves. For pruritis vulvae he resected the posterior labial nerves.

Hailey and Hailey believe that the vast majority of cases of essential, idiopathic or true pruritis of the anus and vulvae are due to eczema and that there are direct and indirect causes for eczema of the anus and vulvae. The indirect cause is the patient's heredity. They believe that eczema, hay fever, urticaria and migraine are closely related manifestations of hypersensitiveness. The direct causes are: (1) chemicals (drugs and dyes); (2) clothing (wool, synthetic fabrics and rubber); (3) hemorrhoids; (4) diet; (5) heat, perspiration and friction; and (6) atmospheric conditions.

Kraurosis and leukoplakia occasionally are forerunners of epithelioma.

While itching is the usual complaint, the sensation frequently is described as smarting, biting, burning, tingling, tickling, stinging, drawing and crawling.

Tuttle¹³ states, "In the patient it means agony beside which pain would be a pleasure."

Hailey and Hailey have no direct (specific) treatment but use roentgen rays and report good results.

C. W. Layton¹⁴ of Minneapolis states that one gynecologist believed that 80 per cent of his cases were due to trichomonad infection and yet dermatologists find that this factor is an uncommon one. He also states that monilial or other fungus infections do not play much of a role. Others claim it in a high percentage of cases. He gives eczema as the cause.

James Mitchell¹⁵ of Chicago, on the other hand, in most of his cases believes monilia a common cause.

Claude Tucker¹⁵ takes meat from the diet and believes in operation of undercutting the skin.

Clark W. Finnerud¹⁶ of Chicago finds little incidence of true eczema and holds more to the theory that pruritis is due to a mycotic infection or to one partially of a bacterial nature.

Hamilton Montgomery¹⁷ of the Mayo Clinic states that 80 per cent of the cases of pruritis ani and vulvae have no evidence of pruritis elsewhere while Hailey and Hailey found 80 per cent did have. He and Buie think fungi occasionally may play a role. Dr. Buie believes that the factor is a circulating bacterial toxin from the anal crypts. They recommend alcohol injections and rest in bed.

Usher and Campbell¹⁸ state: "Resection of the sensory nerves of the perineum is definitely the treatment of choice in cases refractory to other methods of treatment. It affords immediate and permanent relief in a large percentage of selected cases. It is therefore felt that such a procedure, by relieving the irritation and constant trauma from scratching probably prevents subsequent carcinomatous change, developing in the area involved."

Lubowe¹⁹ used stilbestrol in treating pruritis vulvae and reported good results.

Colcock²⁰ stated: "When the process of pruritis vulvae has progressed to the formation of thickened, whitish areas of leukoplakia, surrounded by leathery parchment skin of pruritis vulvae, vulvectomy offers the most effective means of relief but represents the only safe form of treatment since in 50 per cent of the patients with fissured leukoplakic skin over the vulvae, malignant degeneration can be demonstrated."

Figures 1 and 2 illustrate this point (slides courtesy of Dr. H. L. Gainey on two vulvectomies done by him for pruritis vulvae within the last year). On the case in figure 1, Dr. Ferd C. Helwig gave the diagnosis kraurosis vulvi, with tiny focus of carcinomatous change. Dr. Maurice Jones'

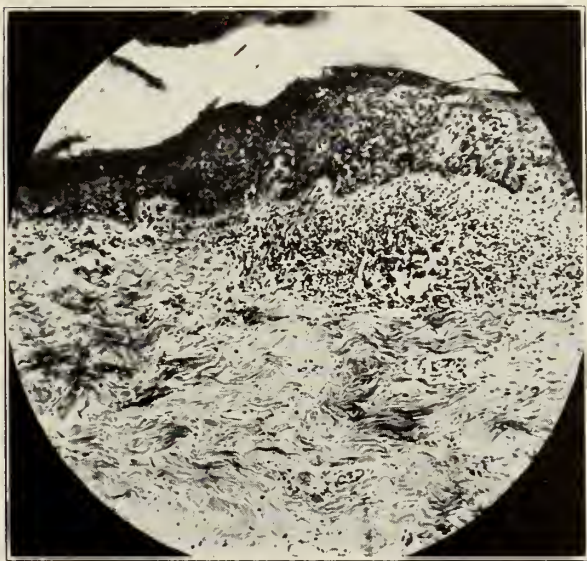


Fig. 1. Kraurosis vulvi with carcinomatous change.

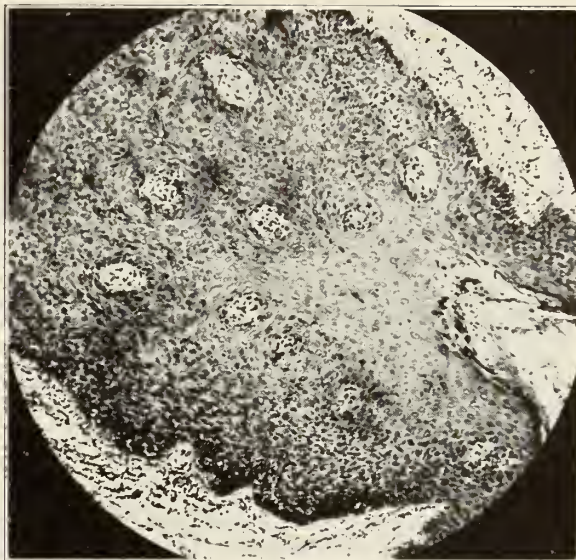


Fig. 2. Hyperkeratosis of vulva skin showing precancerous changes in the squamous epithelium.

diagnosis on the case in figure 2 was hyperkeratosis of vulva skin showing precancerous changes in the squamous epithelium.

Pruritis ani et vulvae associated with menstruation is an uncommon disorder. Obermeyer²¹ states that it does occur but does not elaborate on the subject.

REPORT OF CASE

Case 1. Mrs. K. L. M., aged 32, a well nourished married woman with an intellectual background was operated upon at St. Mary's Hospital, August 11, 1942, for what was thought to be pruritis ani caused by fungus. She gave a history of heat rash during hot weather and a dry skin in winter. In 1932, ten years previous, she had a rectal and vaginal itching just preceding her menstruation and a few days after which was very severe and continued for several months. This itching was noticed always at her period time. The pruritis improved with the use of the usual ointments so that it was not disturbing. She became pregnant in 1935 and had no severe itching until 1942. From 1938 until 1942 she had occasional attacks of asthma. In the summer of 1941, she had what was thought to be poison ivy, which she described as an oozing rash of her right leg. Early in June 1942 she had a prolonged siege of rectovaginal itching which started before her menstrual period and was greatly aggravated by it. She was treated for trichomonas vaginalis by her general practitioner for several weeks without results. He suggested that she consult a rectal specialist.

On August 11, she was examined by me, the examination revealing a typical pruritis ani with some kraurosis at the lower border of the vulva. She was taken to the hospital and under caudal anesthetic a modified Ball undercutting operation, hemorrhoidectomy and cryptectomy were performed. While in the hospital she had an attack of asthma which cleared up in a couple of days and she was dismissed from the hospital in a week. The first ten days postoperatively her incision was healing nicely and she wished to take a vacation trip with her husband. She was permitted to go and about the second day after leaving she began itching at the site of the operation and menstruation started. She immediately broke out with a weeping eczema. The secretion was so profuse that it ran down

her legs when she stood up. While shaving her leg she accidentally broke the skin and this apparently having come in contact with the secretion from her anus, broke out with a similar eczematoid lesion. This was probably the same contact she had had previously when she thought she had poison ivy. She returned home for treatment and the condition soon cleared up with applications of Tar Dermata. She remained free from itching and was comfortable until five days before menstruation at her next period time, when the itching began inside the vagina and spread to the anus, encircling it. This time the secretion was not so profuse and it appeared more like the typical pruritis. Since then I learned that she had for many years had a small patch of eczema behind her right ear that occasionally flared up and secreted serum; also an area in the popliteal space of her right leg. This patient had been checked several times for trichomonas, monilia and Neisserian infections and all examinations were negative.

She gave the same history each time: that the itching started from four to five days before each menstrual period and lasted until four or five days after each period. It started inside the vagina and proceeded to the anus. During this time she scratched in her sleep and so injured the skin that it continued to spread, widening the area. She tied her hands at night but still was miserable. The history had been so persistent in coinciding with menstruation that the conclusion must be drawn that this patient was sensitive to her own menstruation and that it was an endocrine factor and should be treated as such. The operation aggravated her itching as Hirschman stated sometimes occurs. Probably she could be cured permanently by removing both ovaries but this would be contraindicated because she is only 32 years of age. She has been put on stilbestrol, nicotinic acid and thyroid extract. At this time she is much improved.

CONCLUSIONS

1. Some patients are sensitive to their own menstruation, as demonstrated by the case presented.
2. These patients give a history of asthma, urticaria, hives and eczema as is mentioned by Hailey and Hailey.
3. These patients are hypersensitive.
4. Injury to the skin subjects the patient to allergic contact with menstrual flow.
5. Surgery on these cases is definitely contraindicated; in fact, it aggravates the itching.
6. The treatment of choice is stilbestrol, thyroid extract and nicotinic acid.
7. The etiology should be determined as nearly as possible on all pruritis patients and the treatment should be based on these findings.
8. There is no single etiology to be applied to all pruritis ani cases and no single treatment.

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SPECIAL ARTICLE

PROBLEMS IN THE DIAGNOSIS OF HEART DISEASE

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Long ago physicians recognized that not all symptoms referable to the heart were caused by structural changes in the heart or vessels. An attempt has been made to include most of the conditions that may simulate heart disease, thereby creating problems in diagnosis.

INTERPRETATIONS OF MURMURS

Among the large groups of conditions that are likely to be confused with the diagnosis of organic heart disease are the functional heart conditions. The soft systolic murmurs, heard almost as often at the apex as at the base with little transmission away from the point of maximum intensity, with no alteration of second sounds which are maintained as the intensity of the murmur fades when the stethoscope is moved away, should not be too much of a problem. There should be a careful history and examination to rule out rheumatic fever, thyrotoxicosis or infection. Rheumatic infection, as manifested by mitral stenosis, may exist without previous evidence in the history that is characteristic. Anemias may cause rather loud systolic murmurs at the left of the sternum and at the apex. These usually disappear when the anemia is corrected, if that is possible. Those at the pulmonary area are not so much of a problem as those at the apex, in which the question of rheumatic infection always arises.

If auscultation in sitting and reclining postures, in deep inspiration and expiration as well as during quiet respiration cause marked changes in the murmur or cause it to disappear, the murmur may be considered benign, if no other signs or organic heart disease exist. It may result from anemia, pleuropericardial friction or from position of the heart in certain positions. It must be remembered that often the earliest sign of aortic insufficiency, the diastolic murmur, is heard in the upright position in full expiration. Bruits at the base of the

neck or over a hyperactive thyroid are not to be confused with cardiac murmurs; neither are the systolic clicks heard in mediastinal emphysema and in certain normal patients when the heart contracts against the pleura or trapped air. All routine roentgenograms of the heart are not always necessary but, in cases of doubt, it is necessary to do a thorough examination with roentgenogram of the heart, with a right oblique view of the mediastinum during a barium swallow to follow the course of the esophagus and detect any distortion due to an enlarged left auricle. An electrocardiogram is also helpful.

Cardiac measurements should be utilized as an aid in diagnosis after a thorough roentgen examination, but should not be accepted as the final authority in determining whether a heart is enlarged or not.

The transverse diameter of the heart when used with prediction tables to find the deviation from the predicted normal, based upon correlations between body size and heart size, compares favorably with the other actual heart measurements and is the most satisfactory from the clinical standpoint. Orthodiascopy is more complex but it is accurate in estimating heart size in all dimensions in the hands of an experienced cardiologist. The use of the cardiothoracic ratio should be discontinued. It is good practice to keep a record of the left heart border or maximal impulse from the midclavicular line at each office visit when fluoroscope or roentgen ray are feasible.

The roentgenographic and fluoroscopic views of the heart are of value in determining the presence of mitral stenosis. Enlargement of the left auricle can be demonstrated by fluoroscopy in the right anterior oblique position with a barium mixture in the esophagus. Patients with combined mitral and aortic valve defects present definite left auricular as well as left ventricular enlargement. Those with valve disease have little or no left auricular enlargement.

Aortic insufficiency may give rise to apical diastolic murmurs similar to those found in mitral stenosis. Apical systolic murmurs indistinguishable from those of mitral insufficiency also have been heard in patients with aortic valve disease.

Apical diastolic murmurs have been heard in patients with marked anemia and acute or subacute rheumatic myocarditis. Time relations, quality, location and other characteristics of this diastolic murmur of functional mitral stenosis are very similar to those of organic origin.

The misinterpretation of a functional murmur may cause untold trouble and lay the foundation for restricted activity that makes an invalid of a patient or causes suitable ones to develop a cardiac neurosis or a neurocirculatory asthenia. It is just as important not to miss the early murmur of valvular disease when the history would not cause one to limit the patient's activity with activation of the process.

IRREGULARITY OF THE PULSE

The work the heart can do without signs or symptoms of failing is more important than the presence of a murmur; but it is the proper interpretation of this murmur that may alter the prognosis. Fibrillation of the auricles is not so important as the state of the heart muscle itself. Many cases of rheumatic heart disease fibrillate for years with ability to work well, if the rate is controlled and the rheumatic state is quiescent.

Palpitation may be a series of ventricular extrasystoles of no significance or a result of inadequate rest, fatigue, excessive consumption of food, tea, coffee or emotional experiences. Extrasystoles are almost never the presenting symptoms of cardiac disease. They decrease with exercise whereas auricular fibrillation or premature beats due to disease usually increase or are more irregular or are unchanged. Tachycardia occurs in certain types of heart disease and in thyrotoxicosis, after hysterical attacks, as well as during infections and in some patients with neurocirculatory asthenia.

Paroxysmal auricular tachycardia may occur in certain people with no heart disease. Emotional upsets occasionally may set off tachycardias and fibrillations or flutters. Auricular fibrillation may occur in thyrotoxicosis with reversion to normal rhythm after operation and normal metabolism, without the use of cardiac drugs. Sinus arrhythmia with an increase in pulse rate in inspiration with rhythmic variation is most common in children but not unusual in adults. The electrocardiogram is of value in differentiating the arrhythmias, if doubt exists. Persistent auricular fibrillation is associated most often with mitral disease (stenosis). Postoperatively, and during or after anesthesia, extrasystoles or tachycardias may exist for a while. Atelectasis or massive collapse of the lung may occur and cause tachycardia and cyanosis with dyspnea. Pulmonary embolism causes acute signs and is often fatal. The electrocardiogram is of some value in the diagnosis. The signs of acute cor pulmonale develop.

FLUCTUATIONS OF BLOOD PRESSURE

Fluctuations of blood pressure are within the normal range of 140/90 used by the Army induction boards, or 120/80 maximal and 90/60 minimal assumed by some cardiologists, for adults, when taken after a suitable rest period in quiet surroundings. The frequency of postural hypotension in neurocirculatory asthenia and the elevation of systolic pressure in excited selective service examinees is familiar to all. On the other hand, patients who formerly had hypertension with heart disease may show a blood pressure within normal range after failure sets in, yet show little change in heart sounds.

It is important to know that in patients with large arms and in obese persons, the auscultatory measurements of systolic pressure are usually too high and in persons with small arms, it is usually too low

compared with the intra-arterial pressure at the same time. Also the blood pressure is from 5 to 10 mm. Hg. higher when the arm is held downward vertically than it is with the arm held horizontally outward when the patient is in the sitting or standing position. Successive readings should always be taken from time to time with the patient in the same position after resting. There is some evidence to show that this hypertension with excitement and that found with the cold pressor test may indicate a predisposition to the development of hypertension.

EVALUATION OF PAIN

It should be noted that many cases of myocardial infarction develop without pain and should not be overlooked just because there is no sudden pain. Some patients exhibit paroxysmal dyspnea as the main symptom. It is well known that a number of factors in addition to heart disease may cause lowering or inversion of the T waves of the electrocardiogram. The shift of position of the heart in the thorax may cause T wave changes in leads II and III of the electrocardiogram which may be only transitory. A few cases with myocardial infarction may show only inversion of T waves late in the course of the disease.

It is misleading to accept the complaint of thoracic pain occurring in the general region of the heart as constituting positive evidence of coronary disease because the diagnosis of the anginal syndrome is purely subjective in most cases. It is a great help to be able to witness an attack of pain.

Heart pain rarely begins on the chest wall laterally to, or outside of the nipple (midclavicular) line, and it rarely radiates forward or backward from such a laterally located region.

Root pain, as is found in some cases with osteoarthritis of the spine, wherever it begins on the chest wall, radiates forward anteriorly or backward and radiates beyond the nipple line to complete the bandlike zone of the nerve root distribution. Nerve root pain is not relieved by nitrites and usually is not accompanied by vomiting, sweating or pallor. It often is relieved by a change in position and the severity is not directly related to activity.

Other conditions which may be confused with heart disease are pleural pain, either primary or secondary to infection in the lung; radiculitis or nerve root pain; certain cases of gallbladder disease; thyrotoxicosis with tachycardia, dyspnea and at times with auricular fibrillation; obesity with dyspnea and a functional murmur; a diaphragmatic hernia, with the stomach in the thorax, which usually may be noted on the roentgenogram of the chest, and which may have substernal or epigastric pain influenced by effort, emotion or increased after a big meal, but is often relieved by reclining. Cardiospasm, with difficulty in swallowing and substernal pain from an overdistended esophagus; thoracic deformities with decreased vital capacity or pain due to displacement of the thoracic organs or in the spine itself; anemia with dyspnea or fatigue and systolic murmurs; mountain sickness of dyspnea at

high altitudes until adjustment is made with increased numbers of erythrocytes, and spontaneous pneumothorax with sudden pain or dyspnea, may confuse one unless these conditions are kept in mind. Once the possibilities are considered, the methods of excluding them are obvious. The treatment is known generally. Consultation may be necessary in some instances.

One patient with pernicious anemia had pain of anginal nature that disappeared after treatment of the anemia with restoration of the normal red blood cell count. There were no changes in the electrocardiogram. Cases of pneumonia with pleurisy on the left may be confused with myocardial infarct as both have a leukocytosis and increased sedimentation rate with rise in temperature, but the electrocardiogram and roentgenogram of the chest will, with physical examination, aid in the differentiation. It is more confusing when the pneumonia begins in the lung behind the heart and is atypical without acute onset or high fever. The fluoroscopic view of barium mixture in the esophagus and stomach will aid in the exclusion of cardiospasm or diaphragmatic hernia, if they are suspected. This should be done only after the diagnosis of heart disease has been investigated carefully since manipulation of a patient with myocardial infarcts or angina pectoris may be disastrous and unnecessary.

The symptoms of an acute surgical abdominal condition, hemorrhage or shock after trauma, renal stones with pain and hematuria simulating embolism from subacute bacterial endocarditis, mesenteric thrombosis, peptic ulcer and transitory disturbances of rhythm during general anesthesia and after operations may be confused with symptoms of heart or vascular disease.

A very few persons may feign heart trouble in order to get insurance compensation or to get out of the armed forces. Careful consideration from every angle with daily pulse and blood pressure recordings, exercise tolerance tests, in addition to the laboratory procedures, will enable the proper evaluation of these persons.

NEUROCIRCULATORY ASTHENIA

In general, there are two groups of patients with symptoms of heart disease: those who have abnormal physical findings and those who have no abnormal physical findings. Some of those who have abnormal findings have no symptoms. Many who have abnormal findings have symptoms out of proportion to the heart disease present and may even have symptoms referable to, but not due to, the heart.

The effort syndrome, soldier's heart or neurocirculatory asthenia as distinguished from simple cardiac neurosis with anxiety, but no disability, occurs in civilian patients as well as in soldiers. Those usually affected are the introspective, thin chested individuals, especially those with poor mental endowment or reserve of nervous energy. Many have been overzealously guarded from active life by

their devoted parents. Sometimes the careless remarks of a physician about heart murmurs or disease without explanation to the patient of its true nature may lead to semi-invalidism if not neurocirculatory asthenia.

Neurocirculatory asthenia, or effort syndrome, is a condition the cause of which is relatively little understood. The symptoms of pain about the precordium, breathlessness on effort, with rapid pulse and at times a feeling of inability to get enough breath, with frequent sighing respirations, are well known and are not to be confused with true heart disease. It is necessary to inquire carefully regarding the character of shortness of breath and not simply accept the statement as fact.

Some physicians believe that this is merely a manifestation of a disturbance of the personality as in psychoneuroses, and instead of being expressed in symptoms of the gastrointestinal tract or other organs, the attention is centered on the heart. There seems to be a different mechanism in the symptoms of neurocirculatory asthenia and the signs arising in normal people after exercise. The pain may be due to strain on certain muscles from work or may be just predisposed to by the poor nervous reserve and poor physique. This is increased by the patient's belief that it arises from the heart and fear of sudden death. Some urge that the diagnosis of "effort syndrome" be dropped as a proper psychiatric diagnosis is nearly always available.

Others appreciate the importance of the emotional factors but warn against too readily accepting the opinion that it is simply a psychoneurosis feeling that there is a danger of labelling all unexplained illnesses as psychoneuroses. The uniformity in expression of the symptoms must indicate a physiologic disturbance whether it be autonomic, nervous, endocrine or metabolic. In certain persons, an anxiety sustained for a time may cause this disturbance more easily than in others, and with the psychotherapeutic relief of the anxiety, the pain or other symptoms disappear.

It is well to remember that organic heart disease and entirely unrelated diseases may exist in the same individual. These patients deserve a careful examination to rule out any organic lesion or to discover one of less importance than the functional heart disease. The physician should evaluate their relative importance in order to successfully treat the patient. As a rule, in functional cardiac pain there is no progressive increase in severity and no vascular deterioration. It is more frequent in females in the average practice and constitutes a big part of the consulting practice of a cardiologist. It is not confined solely to those with psychologic disorders but may be found in those convalescing from rheumatic fever, pneumonia and other infections. The pain comes often when the patient is at rest, but rarely awakens him from sleep. These patients often have syncope without convulsions probably related to the labile autonomic nervous system and, in some, a pooling of blood in the

splanchnic area in certain situations, or carotid sinus reflexes that are hypersensitive. Some patients also exhibit a postural hypotension with a dizziness on arising suddenly.

TREATMENT

Careful symptomatic treatment is of value but the usual drugs used in cardiac disease that afford relief for symptoms or organic origin, when given inopportunistically, are not only of no value but may be absolutely harmful.

Psychotherapy given with a greatly exaggerated assurance with reassurance and suggestion repeated at later visits frequently relieves the distress. Medicines given under such circumstances should be considered as placebos or suggestive measures. The patient should be taught to rest and relax and encouraged to exercise gradually, especially in the open air, within the limits of his physical endurance.

The physician must, by the art of medicine, convince the patient that the presenting symptoms are not the result of disease as he knows it but of fear, anxiety and uncertainty with perhaps some physiologic disturbance which all together act in certain individuals to create a neurocirculatory asthenia. Some have the anxiety about the heart with no disability. Just as in treating patients with myocardial infarction or coronary heart disease, the modification of the daily program of life must be guided and a new outlook on life attained. Environmental influences are important.

SUMMARY

An attempt has been made to mention the conditions that present themselves in the differential diagnosis of functional heart conditions.

It is often difficult to make the distinction between the functional and the progressive organic type of heart disease. One should not hesitate to express the opinion that the heart is normal if careful examination justifies it. Failure of the physician to separate real disease from the functional may lead to a life of inactivity or invalidism. When there is no associated cardiac lesion or, if present, it is not sufficient to cause the symptoms, or is not serious, the physician should state so emphatically. If in doubt, one may keep the uncertainty to himself until he has observed the patient further. When doubt exists, the physician will render his patient a favor by consulting a cardiologist rather than allow the patient to live with the uncertainty and perhaps progress to a cardiac neurosis. It is just as serious to put a patient to bed for weeks for functional pain because of an improperly interpreted electrocardiogram in the absence of myocardial infarction.

The diagnostic methods have been barely mentioned. The treatment of these conditions is generally understood once the diagnosis is established. Detailed discussion is therefore withheld.

The conditions that may simulate heart disease follow.

I. Murmurs.

1. Functional systolic.

Pleuropericardial systolic.

Diastolic and Austin-Flint type.

Systolic click of mediastinal symphysema.

Systolic murmurs in anemia, thyrotoxicosis, fever.

II. Arrhythmias.

1. Functional sinus arrhythmia.

Extrasystoles—auricular and ventricular.

Often due to excessive smoking, drinking, too much coffee or fatigue.

Paroxysmal auricular, fibrillation and flutter.

Paroxysmal auricular tachycardia.

2. In thyrotoxicosis.

3. Sino-auricular block—vagotonia.

III. Neurocirculatory asthenia.

a. Without organic heart disease.

b. With organic heart disease.

c. Secondary anxiety neuroses in patients who have heart disease without previous symptoms of it.

d. Anxiety neuroses—"cardiac neurosis" without organic heart disease.

IV. Pain.

Nonorganic pains.

a. Precordial aching of neurocirculatory asthenia.

b. Postural or occupational pains of typists, nurses, often pseudoanginal.

c. Red hot needle, nipple point pains (Kilgore).

d. Needle point pains at the breast in vasovagal attacks (Albutt).

e. Circle pains occupying part of the arc of the nipple or of a circle.

Organic pains involving the viscerosensory reflex.

1. From the mediastinum.

a. Angina pectoris.

b. Coronary artery occlusion with infarction.

c. Cardiospasm.

d. Obstructive lesions of the esophagus.

e. Diaphragmatic hernia into the mediastinum.

f. Acute pericarditis and mediastinitis.

2. The pleural reflex.

a. Pleurisy in acute pulmonary and pleural inflammations.

b. Shoulder and chest pain in diaphragmatic pleurisy.

c. Pulmonary embolism.

d. Spontaneous pneumothorax.

e. Left hypochondrium pain associated with aerophagia.

3. Abdominal pain.

a. Inflammation of or rupture of a viscus, or infarcts of spleen—some cases of peptic ulcer and cholecystitis.

b. Mesenteric thrombosis.

c. Stone in kidney simulating embolism due to bacterial endocarditis.

4. Local bursitis of left shoulder or elbow.

Organic pains not involving the viscerosensory reflex.

1. Radiculitis—root pain—segmental pain.

a. Arthritis of dorsal and cervical spine.

b. Tuberculosis of the vertebrae.

c. Meningeal and nerve root tumors.

d. Destructive lesions in intervertebral disks and vertebrae.

e. Compression fractures of the vertebrae (Kummel's fracture).

f. Scoliosis and muscle fatigue with static and postural root pains, without bony changes.

g. Acute infections of the nerve roots and syphilis of nerve root without bony changes (Dejerine).

h. Acute virus infections as in herpes zoster.

i. Tabes dorsalis.

V. Anemias.

1. Blood dyscrasias with dyspnea and rarely, pain due to anoxemia of heart muscle. Reflex syncope.

2. Cerebral anemia—psychogenic.

a. Carotid sinus syncope—vasovagal and cerebral.

b. Vasosympathetic splanchnic episodes.

3. Hemorrhage or shock.

VI. Obesity.

1. Simple } with dyspnea and some-

2. Endocrine } times systolic hypertension.

VII. Thoracic deformities.

1. Funnel chest—decreased vital capacity and pressure or torsion on the heart and vessels.

2. Kyphosis—scoliosis.

VIII. High altitudes.

Mountain sickness—airplanes at high altitudes.

"Even if it should become legal to add vitamins to alcoholic beverages, physiologic consideration would incline to make such formulas undesirable," *The Journal of the American Medical Association* for August 7 says in reference to the stability of vitamins in whisky. "Present government regulations make it illegal to add vitamins to alcoholic beverages. Nevertheless, the fact that many of the diseases associated with chronic alcoholism are due primarily to deficiencies in the vitamin intake of the excessive drinker make information on the stability of vitamins in whisky of more than academic interest. A. F. Novak and S. L. Adams investigated this question by fortifying a standard brand of 86.8-proof whisky with riboflavin, thiamine and nicotinic acid. Part of the whisky was exposed to daylight in clear bottles and part in amber bottles, and a control portion was stored in the dark. The result of the assays showed that riboflavin is unstable in whisky, since a reduction of 50 per cent of the amount added occurred in both paper-wrapped and amber bottles at the end of the two month period. At the end of six months assays indicated that loss of thiamine or nicotinic acid had not occurred and that these members of the vitamin B complex appear to be stable in whisky."

CASE REPORTS OF BARNES HOSPITAL

CLINICAL AND POSTMORTEM RECORDS USED IN WEEKLY
CLINICOPATHOLOGIC CONFERENCES AT BARNES
HOSPITAL, ST. LOUISW. BARRY WOOD, JR., M.D., AND ROBERT
A. MOORE, M.D., Editors

CASE 29

PRESENTATION OF CASE

The patient was a 63 year old single white woman, a dressmaker by trade, who was admitted to the Barnes Hospital on March 23, 1941, and died on May 7, 1941.

Chief Complaint.—Pain in right chest, chills, nausea and vomiting, cough and weakness.

Family History.—Mother died at age of 39 of pneumonia. No family history of tuberculosis.

Past History.—Patient's health had always been excellent. She recalled no childhood diseases other than croup. At no time had she had a chronic cough, hemoptysis, chest pain or night sweats. Nineteen years before entering the hospital she had been bothered by considerable lower abdominal pain associated with menstruation. At that time she underwent a surgical operation which relieved her symptoms. Since the operation she had never menstruated.

Social History.—The patient was born in Missouri, lived there all her life and was educated in private schools. Her occupation was that of a seamstress; her working hours were not excessively long and she ate and slept regularly. She denied the use of alcohol.

Present Illness.—Twelve days before admission to the hospital the patient experienced a slight pain in the right lower chest which she attributed to the fact that she had been sitting in a draft. During the following morning she had a shaking chill and the pain in the right chest became more severe. She vomited several times and for the next two days the pain in the right chest persisted. Nine days before admission she complained of severe pain in the back which caused her to sweat profusely. Her course was then followed by a visiting nurse who told her each day that her temperature was "one degree or so above normal." Throughout this period she complained of excessive thirst. She had a mild cough which was never productive of sputum. On the twelfth day of her illness she entered the Barnes Hospital.

Physical Examination.—Temperature was 38.3 C., pulse 96, respiration 26, blood pressure 110/65. The patient was a thin, elderly woman, apparently in no acute distress. Her facial features were sharp, her eyes sunken, and she appeared to have lost some weight. There was no dyspnea, cyanosis or complaint of pain. Her statements were often irrelevant and at times she would lapse into a semistupor. The skin was warm and dry. There were a few pigmented moles over the abdomen but no rash or petechiae were seen. There was no evidence of recent head injuries and the neck was

supple. The pupils were equal, regular and reacted normally to light and accommodation. The fundi were said to be normal except for mild arteriosclerotic changes in the retinal vessels. Hearing was normal. There were a few bloody crusts in the left nostril. Herpetic lesions were present on the lips and the pharynx was slightly reddened. The trachea was in the midline. The lungs were clear to physical examination except at the right base posteriorly where, from the angle of the scapula downward, there was increased tactile fremitus, slight dullness to percussion, bronchial breath sounds, egophony and many coarse rales. The heart was not enlarged or displaced to percussion. The sounds were of good quality and no murmurs were heard. The peripheral vessels were described as tortuous. The abdomen was distended. The liver edge could be felt three finger breadths below the right costal margin. The spleen was not palpable. Neurologic examination was normal.

Laboratory Examination.—Blood count: red cells 3,760,000; hemoglobin 12.5 grams; white blood cells 11,800; differential count: "stab" forms 2 per cent; segmented neutrophils 84 per cent; lymphocytes 8 per cent; monocytes 6 per cent. Platelets appeared to be normal. Urinalysis: clear amber urine; specific gravity 1.015, reaction basic, albumin negative, sugar negative; microscopic examination: occasional white blood cells and crystals. Kahn test was negative. Stool examination: guaiac test negative. Blood culture showed no growth. Roentgenogram of chest: the right hilar shadow was prominent and spreading out from it was an extensive amount of pulmonary infiltration in the middle and lower thirds of the chest. The descending bronchial divisions were coarse on the left side beyond the apex of the heart. Impression was pneumonia of right lung, pulmonary infiltration of the left lung. Lumbar puncture: initial pressure 140 mm. of water, dynamics normal, cell count 0, Pandy test negative, Wassermann reaction negative, colloidal gold curve normal, protein 11 mg. per cent. Blood chemistry: nonprotein nitrogen was 17 mg. per cent. Agglutination tests: B. typhosus negative; brucella negative. Hematologic examination: mean corpuscular volume 91; mean corpuscular hemoglobin 30; mean corpuscular hemoglobin concentration 33. Sputum: no pathogenic organisms isolated on culture. Examination for malarial parasites was negative. Electrocardiogram showed only sinus tachycardia.

Course in Hospital.—Patient was placed on sulfathiazole therapy in the usual dosage and the blood concentration was maintained at a level of between 3 and 6 mg. per cent. After thirty-six hours of therapy, the temperature fell to normal but the tachycardia persisted. After the third hospital day the temperature gradually rose and by the tenth hospital day it had reached 39 C. The leukocytosis persisted but neither roentgen ray examination nor physical findings in the chest suggested a spread of the pulmonary lesion. Because of the possibility of the fever being due to a drug reaction, sulfathia-

zole therapy was discontinued. On the following day the temperature rose to 41 C. and a blood culture taken at that time revealed type I pneumococcus in the blood stream. Following the isolation of the type I pneumococcus from the patient's blood the advisability of administering type-specific antiserum was considered. A polysaccharide skin test was done but was unsatisfactory because of contamination of the antigen solution. Agglutination tests revealed no type I antibodies in the blood. In spite of these findings no antiserum was given and the patient was again started on sulfathiazole therapy on the fifteenth hospital day. On the day before chemotherapy was resumed, one observer stated that the examination showed the heart normal. No further notes are recorded in the history regarding the patient's cardiovascular symptoms. A blood culture taken on the sixteenth hospital day was negative and repeated blood cultures taken on media containing para-aminobenzoic acid were sterile until the day before the patient's death.

On the day following the resumption of chemotherapy, the patient developed signs of bilateral pyramidal tract involvement. Babinski and Gordon tests were positive. There was bilateral sustained ankle clonus and an increase in the deep reflexes of the arms and legs. There was no stiff neck and the ocular fundi were described as normal. Three days later it was noted by the nurse that the patient failed to respond and there was obvious Cheyne-Stokes respiration. Neurologic findings were essentially unchanged but there now appeared to be some sponginess of the left optic disk with diminution in the physiologic cupping and some distention of the retinal veins. Blood pressure was normal. A lumbar puncture was performed; the spinal fluid was clear and under an initial pressure of 100 mm. of water. Cell count revealed four lymphocytes per cubic millimeter. Cultures and Pandy tests were negative. The patient was seen by the neurosurgical consultant who advised against operation and suggested continuing chemotherapy. Sulfathiazole was discontinued and the patient was started on intravenous sodium sulfapyridine and sulfapyridine by mouth. Twenty-four hours later, the temperature had fallen to normal and a second lumbar puncture revealed no change in the spinal fluid findings except for an increase in the cell count to 68 lymphocytes per cubic millimeter. The level of sulfapyridine in the spinal fluid was 11.8 mg. per cent.

The neurologic examination remained unchanged until the twenty-third hospital day when there were noted signs of incomplete facial paralysis, deviation of the tongue to the right and paralysis of the right side of the soft palate, the right arm and the right leg. The deep reflexes of the right side were more active than those on the left. On the twenty-fourth hospital day a roentgenogram of the chest revealed resolution of the pneumonic process in the right lower lung field. Concentrations of sulfapyridine in the blood varied between 11 and 15 mg. per cent. Lumbar puncture performed on the twenty-fifth and twenty-sixth days showed no change except in

the cell count which was then 16 lymphocytes per cubic millimeter.

On the thirtieth hospital day (twenty-fifth day of chemotherapy), the white blood cell count fell abruptly from 15,800 to 4,500. On the following day the count was 2,900 with 70 per cent granulocytes and the sulfapyridine therapy was discontinued. The white blood cell count continued to fall, reaching a level of 1,000 on the fortieth day. At this time the differential count showed only twelve granulocytes. The count then began to rise rapidly and by the forty-second day had reached 19,000, with 90 per cent granulocytes in the differential count, and on the forty-fifth day was 46,000. From the time that chemotherapy was discontinued, the patient had irregular fever, at times reaching 40 C. On the day before her death the temperature was 41 C. and the blood culture again revealed type I pneumococcus. Sulfapyridine therapy was resumed but on the forty-sixth day in the hospital the patient finally expired. Neurologic examination shortly before her death was unchanged except for a noticeably stiff neck. Lumbar puncture was not repeated. A roentgenogram of the skull taken one week before the patient's death showed the pineal shadow to be in the midline.

CLINICAL DISCUSSION

DR. BARRY WOOD: This patient evidently had a long-standing pneumococcal infection. It lasted for fifty-eight days. Her illness may perhaps be divided into three phases: the initial phase in which the disease resembled lobar pneumonia; a second phase in which positive blood cultures were secured on several occasions, and a third phase in which she obviously had cerebral complications. We might consider these phases in order. Dr. Hageman, do you think the initial illness was lobar pneumonia?

DR. PAUL HAGEMAN: The history of chill, fever, sharp pleural pain associated with cough is very suggestive of it.

DR. WOOD: In other words, she had four of the five cardinal symptoms of lobar pneumonia. The fifth symptom, bloody sputum, she did not have. The physical examination was compatible with that diagnosis, was it not?

DR. HAGEMAN: Yes.

DR. WOOD: Does anyone feel that pneumococcal lobar pneumonia was not the initial illness? Dr. Hageman, what is the usual course of pneumococcal lobar pneumonia?

DR. HAGEMAN: Treated or untreated?

DR. WOOD: This patient received no treatment for the first twelve days, so let us consider untreated lobar pneumonia.

DR. HAGEMAN: A patient with untreated pneumococcal pneumonia is apt to run a high and continuous fever and to have a continuous cough, often productive of sputum which changes from pink to rusty to brownish color with the progress of the disease. In the majority of instances with type I pneumococcus infection, the disease terminates by crisis, with sudden fall in temperature and pulse

rate, with rapid improvement of the patient and profuse diaphoresis. This patient did sweat profusely on the fourth day of illness. That is rather early for a crisis, but it could have occurred at this time.

DR. WOOD: Dr. Fischel, you have seen more cases of untreated lobar pneumonia than most of us. On what day does the crisis usually occur?

DR. WALTER FISCHEL: Usually from the seventh to the ninth day, but I have known it to occur as early as the second day.

DR. WOOD: I think we can assume then that this patient had some complication of pneumococcal pneumonia. Dr. Goldman, what are some of these complications?

DR. ALFRED GOLDMAN: Empyema, pleural effusion, pericarditis and endocarditis.

DR. WOOD: The first three are due to direct spread of the infection. There is also a group of hematogenous complications in which the spread is not direct. You mentioned endocarditis. What are the others?

DR. GOLDMAN: There may be a lesion in any other part of the body—the brain, for example, as in meningitis. Arthritis also may occur.

DR. WOOD: The incidence of pleural effusion is unknown, but some estimates put it as high as 40 per cent. The incidence of empyema in untreated pneumonia is about 5 per cent, of pericarditis 1 per cent, of endocarditis 1 per cent, of meningitis 1 per cent and of arthritis 0.5 per cent. The most striking feature of this patient's course was the positive blood culture obtained on the twenty-third day. What does that indicate to you, Dr. Hageman? Is bacteremia common in uncomplicated lobar pneumonia?

DR. HAGEMAN: No, it is rare. In fact, it should not occur at all. It suggests that there must have been a focus of pneumococcal infection that was feeding the blood stream and had probably been present for some time previously. This patient had been on sulfathiazole therapy for ten or eleven days at the time this positive blood culture was obtained. That would suggest either that this was an organism resistant to the effect of chemotherapy or that the focus was not accessible to the drug. I would suspect the endocardium as being the seat of this focus.

DR. WOOD: You think that the patient may have had an acute bacterial endocarditis, caused by the pneumococcus?

DR. HAGEMAN: Yes.

DR. WOOD: There are three principal causes of late bacteremia: a focus that is extrapulmonary (such as empyema), an endocarditis and, lastly, a spread of the pneumonia. These various possibilities were considered and certain immunologic tests were done. Dr. Hageman, will you discuss what was done, why it was done and tell us whether or not you agree with the interpretation. An attempt was made to do a Francis skin test and that was unsatisfactory. Agglutination tests were run

and no antibodies were found. What was the rationale of these tests?

DR. HAGEMAN: The staff was trying to find out if an immunity was developing to the infecting type of pneumococcus. There was no circulating antibody according to the results of the tests.

DR. WOOD: If there had been an immunity, what would that have indicated to you?

DR. HAGEMAN: It would have made it doubly surprising that she had a bacteremia.

DR. WOOD: What is the one condition in which circulating antibodies are often present with a positive blood culture?

DR. HAGEMAN: Endocarditis.

DR. WOOD: Yes. That is the one condition. Once you establish the presence of antibodies and organisms in the blood stream you can make an almost unqualified diagnosis of endocarditis. In this case we do not have that information because the test for antibodies was negative. Does that rule out endocarditis?

DR. HAGEMAN: No. Many patients recover from pneumococcal pneumonia without developing agglutinins.

DR. WOOD: Why was no antiserum given? Would you have given antiserum?

DR. HAGEMAN: I think it should have been given. I do not know what the reason was that it was not given. Apparently there was no evidence of spread of pneumococcal infection but experience with pneumococcus antiserum is that it will clear the blood stream unless there is an endocarditis.

DR. WOOD: Yes, I agree with you that antiserum should have been given. Dr. Rioch, the most interesting part of this case concerns the cerebral complications. You will recall that on the twelfth day of the patient's illness she was examined and was said to be stuporous, although the neurologic examination was normal. On the twenty-seventh day she had bilateral pyramidal tract signs. On the thirty-fifth day she developed right hemiplegia, and on the forty-fifth day her neck was stiff. What lesions would you suggest to account for these signs?

DR. DAVID RIOCH: This patient received heavy chemotherapy and all sulfa drugs depress activity of the nervous system, especially the cortex. It is possible that her stupor may have resulted from a depressed cortex without any local lesion. Until just before death she showed no real signs of meningitis, and the lymphocytes in the spinal fluid are more indicative of intracerebral disease, possibly of epidural abscess or an abscess in the bone. On the whole, a sterile meningeal reaction gives a predominance of polymorphonuclear leukocytes. For example, secondary to a mastoiditis, that would occur, rather than the pure lymphocytosis that this patient showed. How much of the chronicity of the condition is reflected in the lymphocytic pleocytosis is open to question. The spinal fluid was normal a week before, however, and that indicates that there was not previously a direct infection of the meninges. The bilateral pyramidal tract signs are

against a local inflammation of the brain. The hemiplegia apparently came on suddenly, and there was no drop in pulse rate at that period—one of the cardinal signs of brain abscess. The fever would not be an indication of the development of an abscess, and leukocytosis in the blood is no criterion. If there were an abscess, one would expect a drop in pulse rate and an increased pressure in the spinal fluid. The spongy appearance of the optic disk is not specific of anything. The sudden onset is more characteristic of an embolus—probably a septic embolus—and the final meningitis was a rupture of that embolus into the subarachnoid space. I think either a thrombus or an embolus the best diagnosis, the terminal event being probably a frank meningitis. I would have liked more description of the stiffness and rigidity of the patient's neck. If this was a true stiff neck, one would think of a terminal meningitis the day before death.

DR. WOOD: You believe then that the patient probably had a septic embolus?

DR. RIOCH: Yes, or a thrombosis on the basis of her debilitated condition. That is almost as probable.

DR. WOOD: Would it help if we told you that the patient did have an endocarditis?

DR. RIOCH: Then I would say it was a septic embolus.

DR. WOOD: Dr. Hageman, do you think we may tell Dr. Rioch that?

DR. HAGEMAN: It is my guess, but I do not think we can say it definitely.

DR. WOOD: There are one or two other things we have not mentioned. One is the liver. Dr. Massie, the patient was said on admission to have had a large liver. This was not elaborated upon in the clinical abstract. What do you think of this?

DR. EDWARD MASSIE: In order to be sure a liver is enlarged one should feel it below the costal margin and should percuss the right chest down to the area of liver dullness. I do not think this patient will show a large liver, except for terminal acute congestion.

DR. WOOD: Do you think she had endocarditis?

DR. MASSIE: I should prefer to say she did not.

DR. WOOD: Why?

DR. MASSIE: Since the house officer persistently heard no murmur, an endocarditis would be unusual. On the basis of no murmurs I should say that the valves were intact.

DR. WOOD: Is it not true that the cardiac signs in acute bacterial endocarditis are notoriously treacherous? In staphylococcal endocarditis there is often no murmur.

DR. MASSIE: But this patient had daily auscultatory examinations and we would expect the murmur to be heard at least off and on. In fact it is strange there was no systolic murmur simply on the basis of the tachycardia, fever and anemia.

DR. WOOD: Our whole diagnosis hinges upon the heart. It is difficult to explain this patient's symptoms and signs without making a diagnosis

of endocarditis. How, otherwise, can we explain the positive blood culture on the twenty-third day?

DR. MASSIE: We have to make diagnoses many times by deductive reasoning. On the basis of physical signs I would say this patient had no endocarditis. But on the basis of the way you put the problem I would say deductively, that she did have endocarditis.

DR. WOOD: We have to present a final diagnosis to Dr. Moore. We might suggest as a final diagnosis that the patient had resolving pneumonia of the right lower lobe, acute bacterial endocarditis, either a brain abscess from embolism or possibly meningitis and, finally, agranulocytosis.

DR. EDWARD REINHARD: May I suggest an explanation of the sudden hemiplegia? It is interesting that the patient had agranulocytosis and an elevated white count. It is possible that she had a thrombocytopenia and intracranial hemorrhage.

DR. WOOD: Is it not true that the neurologic manifestations began a week before the agranulocytosis?

DR. REINHARD: Yes. Abscess is more likely, but thrombocytopenia is another possibility.

DR. WOOD: Dr. Hageman, how do you feel about the final diagnosis?

DR. HAGEMAN: Any focus could cause an intermittent bacteremia, but the cerebral episodes seem typical of embolic phenomena and, except for the endocardium, I cannot postulate any other focus which would give rise to such emboli.

DR. WOOD: Dr. Goldman, do you agree?

DR. GOLDMAN: Yes. The lungs appear to have cleared, ruling out local abscess.

DR. CHARLES DUDEN: There have been cases of pneumococcal bacteremia in which there was an endocarditis without any changing murmurs in the heart from daily observation. Norman Plummer has reported a number of them. I remember two cases he reported in his work on sulfapyridine. He says that if a pneumococcal bacteremia persists with good sulfapyridine therapy, there is bound to be an endocarditis. Neither of his cases showed anything in the heart on physical examination.

DR. HAROLD BULGER: What about the two negative blood cultures? Is not that surprising with endocarditis?

DR. WOOD: It is characteristic of viridans infections to have many sterile blood cultures. The only time blood cultures were positive in this case was when chemotherapy was stopped. I do not think it is strange to have blood cultures remain sterile in endocarditis when the patient is on chemotherapy.

DR. BULGER: What about the pain in the back, and the stiff spine? How about osteomyelitis of the spine to explain the pyramidal tract lesion?

DR. WOOD: Dr. Rioch, what do you think?

DR. RIOCH: It is possible. The symptoms came much later and if they were caused by pressure from epidural abscess one would have expected more changes in the spinal fluid.

DR. JOHN SMITH: An endarteritis might occur without any murmurs.

CLINICAL DIAGNOSIS

Lobar pneumonia, right lower lobe, type I, resolving.
Septicemia, pneumococcus, type I.
Brain abscess, multiple.
Toxic agranulocytosis, sulfapyridine.

DR. WOOD'S DIAGNOSIS

Pneumococcal pneumonia, right lower lobe, resolving.
Pneumococcal endocarditis.
Pneumococcal brain abscess from infected emboli.
? Terminal pneumococcal meningitis.

ANATOMIC DIAGNOSIS

Chronic endocarditis of the mitral, aortic and tricuspid valves.
Subacute bacterial endocarditis of the mitral valve.
Acute purulent leptomeningitis.
Multiple abscesses of the left basal ganglia and corpus callosum.
Acute arteritis of the small cerebral arteries.
Infarcts of the spleen.
Bronchopneumonia of the lobes of the lungs, slight.
Infarcts of the kidneys with the formation of small abscesses.
Myeloid hyperplasia of the bone marrow.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: There are three points to consider in arriving at a rational explanation of the case as a whole: first, the nature of the lesion in the lung at the time of death. It was a purulent bronchitis and bronchopneumonia, characterized by infiltration with polymorphonuclear leukocytes. I think this represents another pneumonia rather than a continuation of the original pneumonia. The second point to consider is the nature of the lesion on the valves and the conditions related to that. The vegetation on the valve had organization at the base, one of the characteristics of subacute bacterial endocarditis. Secondly, this patient did have a previously damaged valve—fibrous thickening, which gives some support to the idea that the present lesion represents a pneumococcal subacute bacterial endocarditis. The lesions in the cerebral arteries were typical of those found in subacute bacterial endocarditis. The infarcts in the spleen and kidneys are probably septic in character since numerous polymorphonuclear leukocytes were found in and about the region of infarction. The location of the abscesses in the left basal ganglia accounts for the right hemiplegia. The third point concerns the nature of the lesion in the bone marrow. There is extreme myeloid hyperplasia and most of the cells are late myelocytes and adult polymorphonuclear leukocytes. It is somewhat surprising that this patient had a marked granulocytopenia six days before death and yet regained a normal granulocyte count.

I would propose for discussion that this patient had a lobar pneumonia fifty-eight days before death. She recovered from the pulmonary part of that infection, but some time during the early days of the infection she developed an inflammation of the endocardium of the mitral valve which took on the character of subacute bacterial endocarditis. There were in the following forty to fifty days most of the complications of the usual case of subacute bacterial endocarditis caused by *Streptococcus viridans*. There are at least three lines of evidence to support a diagnosis of subacute bacterial endocarditis: first, she was ill for more than six to eight weeks, the minimum given in most definitions of that condition; second, there was organization in the vegetation—the best anatomic criterion; third, the variable blood culture—positive and negative—which is characteristic of that disease. Some time before death another pneumonia developed—bronchopneumonia—and cardiac failure, and she died of infection and failure of the heart.

DR. WOOD: Dr. Moore, it is well known, is it not, that pneumococcal endocarditis may be subacute?

DR. MOORE: Yes.

DR. WOOD: There is one point still not clear. *B. coli* was the only organism cultured from the heart valve. Do you believe that this was a colon bacillus endocarditis?

DR. MOORE: No.

DR. WOOD: Can you prove that the endocardial lesion was caused by the pneumococcus?

DR. MOORE: There is presumptive proof, but not definite proof, since we did not recover pneumococci from the vegetations.

DR. MASSIE: Was there anything characteristic about this vegetation that might have resulted in the absence of endocardial sounds?

DR. MOORE: It was in the usual place—on the posterior leaflet along the line of closure.

CASE 30

PRESENTATION OF CASE

R. F., a 53 year old man, with no occupation, entered Barnes Hospital on the Genito-urinary Service on November 23 and died November 28, 1942. Only a fragmentary history could be obtained.

Chief Complaints.—Fever and malaise.

Family History.—Not stated.

Social History.—Not stated.

Past History.—The patient had had asthma for several years, the details of which were not obtained. No other illness was recorded.

Systemic History.—Not given.

Present Illness.—The patient had had prostatic hypertrophy and prostatitis and reported periodically to a physician's office for prostatic massage. He was seen by another physician two weeks previous to admission who found the prostate small and fibrotic. The urine at that time was clear and contained no pus. Following light prostatic massage, bloody secretion was obtained. Twenty-four tablets of sulfathiazole were prescribed, two to be taken three times a day (3 grams). On complet-

ing this course, the patient had the prescription refilled and took twenty-four more tablets. Two days before admission, he developed chills and a slight cough and felt very ill. His temperature was 101 F. A physician prescribed tablets which were believed to have been a sulfonamide compound. The following day the temperature rose to 103 F. and the patient was sent to the hospital.

Physical Examination.—Temperature, 39 C., pulse 122, respiration 30, blood pressure 210/142. The patient was an extremely obese middle aged man who appeared acutely ill with fever, rapid respirations and cyanosis. He was semistuporous but when aroused was oriented. There was a macular eruption over the chest below the level of the breasts. The eyes were not remarkable. Examination of the chest was difficult because of obesity and lack of cooperation but nothing abnormal was heard in the lungs. The heart outline could not be made out by percussion. The sounds were distant, the rhythm regular. No murmurs were heard. The abdomen was normal. The deep reflexes were normal.

Laboratory Findings.—Blood count: red cells 4,810,000, hemoglobin 14.8 grams, white cells 8,450; differential count: "stab" forms 41 per cent, segmented forms 37 per cent, lymphocytes 19 per cent, monocytes 3 per cent. Urinalysis: specific gravity 1.018, acid, albumin 3 plus, sugar negative; microscopic: occasional red blood cell, many crystals resembling those of sulfathiazole. Blood chemistry: nonprotein nitrogen 33 mg. per cent, CO_2 combining power 40.1 vol. per cent, sulfathiazole level 7 mg. per cent. Roentgenograms of the chest showed normal lungs and heart. The diaphragm was slightly elevated. Electrocardiogram revealed slurring and notching in all leads and low voltage detected over the right upper lobe. A blood culture taken on admission was reported as negative.

Aminophyllin, .48 grams, was administered intravenously every four hours (apparently for asthma). Adrenal cortical extract was given intramuscularly and fluids were administered parenterally.

November 26: The temperature fell during the day to normal; the respirations were 24 per minute but were labored; the pulse rate remained high but the quality was fair. The blood pressure was 128/75 in the morning. Toward evening it fell to below 80/70 when it could no longer be obtained. The respirations slowed to 12 per minute and the pulse was imperceptible. Aminophyllin was discontinued and coramine was given every two hours and adrenalin every hour.

November 27: The patient appeared to be improved. The temperature remained below 38 C. The pulse had returned to one of fair quality and respirations were not so labored. A fine twitching of the muscles of both hands and occasional jerking movements were noted. The blood pressure was 80/50. The blood nonprotein nitrogen was 85 mg. per cent; the CO_2 combining power was 50.4 vol. per cent; chlorides were 534 mg. per cent and

sugar at 11:30 a. m. 790 mg. per cent. The patient was stuporous. He was given 100 units of crystalline insulin at 1:30 p. m. The blood sugar at 4:30 p. m. was 350 mg. per cent. Red blood cells had dropped to 3,250,000 and hemoglobin to 8.4 grams. White blood cells were 12,200. During the day the temperature steadily rose. The pulse became weak and rapid, respirations increased in rate and the blood pressure dropped to 50/0. Stupor continued and the patient died at 9:30 p. m.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: Dr. Olmsted, you saw this patient when he came in. Is this an accurate picture of his appearance on admission?

DR. WILLIAM OLMSTED: Yes, I think so. The clinical problem was one of shock. He was anuric and his low blood pressure had to be combatted continually.

DR. ALEXANDER: It was difficult to secure a history. He did have prostatitis, and he apparently had had asthma for some years, and his blood pressure on admission suggested that he may have had hypertensive vascular disease. On physical examination nothing was heard in his lungs and the one striking lesion was the macular eruption on his chest. A drug reaction was suspected. Dr. Hageman, are these symptoms and signs—sudden onset of fever, chills, great prostration and a macular eruption—in keeping with a sulfonamide drug reaction?

DR. PAUL HAGEMAN: The chills, fever and macular eruption are. Prostration is not usually seen in a simple drug fever.

DR. ALEXANDER: Do you think the hypertension had anything to do with it?

DR. HAGEMAN: With the drug fever and rash—no.

DR. ALEXANDER: Dr. Hageman, a few years ago you wrote an important paper wherein you compared sulfonamide drug reactions with serum sickness. Is it still your impression that this represents a so-called drug allergy?

DR. HAGEMAN: I believe that evidence points in that direction.

DR. ALEXANDER: Will you tell us how serum sickness and the manifestations of sulfonamide fever resemble each other?

DR. HAGEMAN: In the drug fevers and rashes that are seen following sulfonamide therapy the time interval before the development of symptoms is the same as that following serum administration—from seven to ten days. Other points of similarity are that fever and rashes are seen in both conditions and that joint pains are observed in certain types of sulfonamide reactions such as are common in serum sickness. On the readministration of sulfonamides to a patient who had had such a reaction previously, there is an accelerated reaction, such as is seen in repeated administrations of serum.

DR. ALEXANDER: Do you feel, then, that every drug reaction is an allergic reaction, and that these drugs have no toxic properties?

DR. HAGEMAN: Yes.

DR. ALEXANDER: For the sake of clarity, as we discuss this case, we must distinguish between the toxic reaction to a drug and the allergic reaction to a drug. An overdose of a toxic drug such as oil of wintergreen always results in the symptoms of salicylate poisoning. But only a few persons are allergic to a drug. Then, persons who have a toxic reaction on administration of a very small amount of a drug are said to have an idiosyncrasy. The question I asked Dr. Hageman was: Are these sulfonamide drugs directly toxic, or is the reaction to them an allergic response? Dr. Wood, do you agree with Dr. Hageman that the reaction to sulfonamide drugs is an allergic reaction?

DR. W. BARRY WOOD: Certain of the renal reactions are direct toxic reactions.

DR. ALEXANDER: Is there any proof that the clinical manifestations are allergic? In serum disease there are immunologic reactions in about 80 per cent of cases. Has anything of the kind been found in sulfonamide allergy?

DR. HAGEMAN: It has been found in a very few instances, under very special conditions. The usual case is that patients do not respond to skin tests but their serum occasionally may contain precipitins to antigens formed by combining the drug with protein.

DR. ALEXANDER: If one uses conjugated protein antigens against serum of a patient who had such a drug reaction, precipitin tests may be positive?

DR. HAGEMAN: Yes.

DR. ALEXANDER: I did not know that. If that is true, that is suggestive evidence that this is the same process as serum sickness. Have skin tests been done with conjugated proteins?

DR. WOOD: They have been negative. Dr. Abernathy in Washington obtained a few positive precipitin tests, but the results were very irregular and not conclusive.

DR. ALEXANDER: In serum sickness both skin tests and precipitin tests are positive in about 80 per cent of cases. Has passive transfer to guinea pigs been accomplished with the serum of patients having drug reactions?

DR. WOOD: No, not that I know of.

DR. ALEXANDER: Then we have very slight immunologic evidence that serum reactions and sulfonamide reactions are identical. Dr. Hageman, is it true that a second administration of a sulfonamide drug is much more likely to produce drug fever than one administration?

DR. HAGEMAN: The most important evidence in that direction is the work of Lyons who ran a series on patients receiving sulfathiazole at several different times. He found a high incidence of drug fever and rash on second and third administrations of sulfathiazole. But other investigators have not confirmed his findings.

DR. ALEXANDER: Is that true clinically, Dr. Wood?

DR. WOOD: I do not think so, but it is a debatable point. The problem has been discussed whether or not prophylactic administration of sulfonamides to soldiers and sailors to prevent gonorrhea might

sensitize them to further doses in the treatment of wounds. The consensus is that there is no good evidence that the incidence of drug fever on second administration is any higher.

DR. ALEXANDER: But if a person is sensitive, even a small dose the second time is dangerous?

DR. WOOD: Yes.

DR. ALEXANDER: In the present case, we have no indication that this man reacted the first time to the twenty-four tablets he was given. He became suddenly and acutely ill some time after the second dose of twenty-four tablets. Dr. Wood, is this the usual picture? Are the patients who become acutely ill or die usually the sensitive persons, or those who have had the drug for the first time?

DR. WOOD: I think that fatal reactions are more common among those who are receiving sulfonamide drug for the first time. In cases like this, the reaction to the drug is not recognized in the beginning and, when the fever and symptoms develop, the physician often gives the patient more drug. This patient obviously became sensitized during the course of the therapy.

DR. ALEXANDER: His blood level was only 7. Is this evidence of accumulation of the drug, or of hypersensitivity?

DR. WOOD: I think it is evidence that the patient became sensitive during the course of the therapy, and then was given more drug.

DR. ALEXANDER: He probably had only 24 gm. in two weeks. He must have been very sensitive. Is it true, on the basis of statistics, that those who receive the drug for the first time are most apt to succumb?

DR. WOOD: That is my impression.

DR. ALEXANDER: Dr. Hageman, do you agree?

DR. HAGEMAN: Yes.

DR. LLEWELLYN SALE: If that third course of tablets was not sulfonamide, then the level of 7.6 is extremely high. Is it not interesting that the patient's blood level was 7.6 on the twenty-third day and 7.6 on the twenty-fifth day?

DR. ALEXANDER: It shows that his kidneys were not working very well. Are there any further remarks on the question of hypersensitivity? Many patients with sulfonamide reactions do not die and the question arises, what else may have contributed to this man's death? Dr. Olmsted, do you think that the blood pressure of 210/142 on admission was significant?

DR. OLMSTED: I think it may have been since it may have indicated chronic hypertensive cardiovascular disease.

DR. ALEXANDER: His heart was not enlarged. His temperature came down when the drug was omitted and then went up again. Dr. Sobin, you have been interested in the renal lesions in such cases as this. Can you tell us something about what is found in experimental animals given excessively large doses of sulfonamide drugs?

DR. SIDNEY SOBIN: Experimentally in animals, the lesions are not exactly comparable to those in man. In the experimental animal and in most cases of

human anuria, the lesion is one affecting the tubules of the kidney. However, in sensitization experiments the lesion is one of focal necrosis and may occur in the kidney. In human beings both types of lesion may be found: focal necrosis and a necrotizing lesion in the renal tubules.

DR. ALEXANDER: Dr. Wood, what do you believe happened to this man after his acute illness developed, apparently as the result of the sulfathiazole reactions?

DR. WOOD: I think that he died of renal insufficiency and possibly also suffered myocardial lesions.

DR. ALEXANDER: Do you believe that we will find necrosis of the tubules, or only focal lesions in the kidney?

DR. WOOD: I think that there will be diffuse lesions of the kidney tubules and probably also focal necrosis, not only in the kidney but in other organs of the body.

DR. ALEXANDER: Is there evidence that this tubular lesion is an irritative phenomenon?

DR. WOOD: I think Dr. Sobin might answer that question.

DR. SOBIN: I believe that it depends upon mechanical plugging of the tubules rather than on any chemical effect.

DR. SALE: A nephritis has been described—interstitial nephritis—in which no crystals were found in the tubules and the lesion was mainly a hemorrhagic, granulomatous, cortical lesion.

DR. FRANK BRADLEY: Does not forcing fluids and diluting the urine have a protective effect against sulfonamide nephritis?

DR. WOOD: Yes. The more alkaline the urine, the more soluble is the acetyl derivative of the drug in the urine and the less likely is it to form any crystals in the kidney.

DR. ALEXANDER: Have you any idea of the incidence of fatalities from sulfonamide drugs?

DR. WOOD: I think that recently in New York, Sutliff reported twenty odd cases. When you consider the amount of sulfonamide drug that has been used in the New York area in the last four or five years, that is a very low number of deaths.

DR. ROBERT MOORE: There was an interesting report on that subject in the *Journal of the American Medical Association* several months ago in which by combining figures from the Department of Health on the incidence of pneumonia, the author attempted to answer the question: how frequently do sulfonamide fatalities occur? The number was significant—that is, it was not so low that it could be dismissed.

DR. ALEXANDER: Are there any other questions or comments?

DR. WOOD: For the sake of completeness should we not mention periarteritis nodosa as a type of lesion caused by sulfonamide drugs?

DR. ALEXANDER: That is a good suggestion. Will you tell us why it is a possibility?

DR. WOOD: Rich recently has described periarte-

ritis nodosa as one of the lesions occurring in patients dying with sulfonamide reactions.

DR. ALEXANDER: Rich had eight cases, seven of which were pneumonia. Seven of the patients had had sulfonamide and serum and one serum alone. They all showed lesions of periarteritis nodosa except the one who had serum alone.

DR. SALE: How frequent is hyperglycemia?

DR. OLMSTED: The reason that a blood sugar was taken was because we thought that the patient might have a low blood sugar. The question came up: was this patient a potential diabetic?

DR. SALE: How high a blood sugar may one have with anuria?

DR. OLMSTED: I do not think renal insufficiency often influences the blood sugar.

DR. SALE: Might there be focal lesions in the pancreas?

DR. OLMSTED: They would have to be very extensive to cause a high blood sugar.

DR. BARRETT TAUSSIG: I would like to ask two questions: Can adrenalin given every hour produce a blood sugar of 790? Can the fall in hemoglobin from 14.8 to 8.4 be explained on the basis of this discussion?

DR. OLMSTED: As to the first question, I do not think it would force the blood sugar to that high a level.

DR. BULGER: It is surprising to find it that high, but adrenalin may have been a factor. It may cause very high levels in animals.

DR. ALEXANDER: Why did he have the sudden fall in red blood cell count?

DR. MASSIE: Perhaps because of hydration—he had anuria and was given large amounts of fluid.

CLINICAL DIAGNOSIS

Sulfathiazole poisoning.

Prostatitis, simple.

DR. ALEXANDER'S DIAGNOSIS

Sulfathiazole poisoning; anuria.

ANATOMIC DIAGNOSIS

Acute inflammation of prostate.

Foci of necrosis and foreign body granulomas in the prostate (history of administration of sulfathiazole).

Foci of necrosis in the liver, spleen and kidneys.

Acute nephrosis.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: A point that should receive some consideration is concerned with the nature of the lesions. Are they allergic? Are they the result of direct action of the crystals of the drug? Are they toxic, from the drug in solution? We did not find any lesions of periarteritis nodosa in this man nor any eosinophilic infiltration. In the kidney the lesions were degenerative and I assume that they represented a toxic reaction. The same is probably true of the focal necroses in the other

viscera. We did find sulfathiazole crystals in the tissues of the prostate. The lesions were presumably the direct result of the action of the crystalline substance in the tissues. In the lungs we did not find any anatomic changes of asthma. As regards the hyperglycemia and the possibility of diabetes—in a few of the pancreatic islands there was hyalinization and there was a slight degree of glomerulosclerosis. These findings are not significant in a man of this age. There was no glycogen in the renal tubules. We can submit no definite evidence to answer the question: Did he have diabetes?

DR. WOOD: What was your impression when you first looked at these sections?

DR. MOORE: My impression of the section of the prostate was that it was tuberculosis of the prostate. I still think there is one lesion that is more typical of tuberculosis than any I have ever seen. We have made acid-fast stains of the prostate and other tissues, however, and have found no bacilli. The lesion is very similar to the tubercle. The identification of crystals helps us in identification of the lesion.

ABSTRACTS AND DIGESTS

PETROLATUM AS A MEDICAMENT FOR CHILDREN

Petrolatum as a Medicament for Children. John Zahorsky. *Arch. Ped.* 60:250 (May) 1943.

Zahorsky gives a clinical discussion on petrolatum as an excipient for medicines for children.

Petrolatum, that is, a liquid or semisolid hydrocarbon of the aliphatic series, has been used in the treatment of children's diseases for more than half a century. Its nonirritating and antifermentative properties commended it as a desirable vehicle for external applications on the skin and mucous membrane. Then, its internal administration seemed rational chiefly as a nonirritating laxative.

Long ago it was learned that petrolatum was not absorbed when injected parenterally and that it remained in the tissues as a foreign body around which a mild but chronic inflammatory reaction developed after a varying interval. Liquid petrolatum is not saponifiable like the true fats; the human body can do nothing with it except to encase it in a fibrous coating. True, when the deposit is near the surface, as in the mucous membrane, the leukocytes and giant cells may convey it gradually to the surface.

Then it was learned that liquid petrolatum when aspirated into the lung produces a singular form of chronic inflammation, now known under the name of lipoid pneumonia, the pathology of which is characteristic.

I wonder how many infants with persistent rhinitis who are afflicted with a chronic sinusitis have been harmed by the daily instillation of petrolatum

in the nose. The question of adenoid hypertrophy due to the absorption of mineral oil into this gland also needs an answer.

Some surgeons have reported that the healing of wounds was delayed by the application of petrolatum.

Several investigators discovered that the daily ingestion of mineral oil seriously retards the absorption of vitamin A and possibly D. Vitamin K is diminished enormously in the blood of pregnant women habitually taking petrolatum as a laxative.

My own observation on infants who had been bathed with mineral oil daily, a practice which had become almost universal, revealed patches of skin disease—a folliculitis in various parts of the body. The pores of the skin, especially the stomata of the sudoriferous glands, seemed to be occluded, and small red papules not unlike prickly heat appeared on the face, back of the neck, back, buttocks and thighs. These lesions usually were red papules, sometimes minute pustules, generally discrete, but occasionally in small patches. Their healing was exceedingly slow and no local application affected them. When it was realized that petrolatum can produce skin lesions, the treatment of soap and water was adopted. The order was to wash the baby at least twice a week with soap and water. Petrolatum on the skin is harmless if it is not forced into the pores by too much friction and when it is thoroughly removed at regular intervals by soap and water. Oiling the baby for several weeks is not exactly a hygienic measure.

For some time I have received the impression that the official oxide of zinc ointment does not possess the healing properties that were ascribed to it twenty years ago. No wonder! Formerly, benzoated lard was used as the base, but soft petrolatum was substituted for lard in the ninth revision of the U. S. Pharmacopeia. Lard is a fat, petrolatum is a methane hydrocarbon. The old zinc oxide ointment was far superior in treating various irritative lesions of this skin.

To these clinical observations, we now must add the experimental studies of Stryker (*Arch. Path.* 31:670): "Small amounts of petrolatum are absorbed from the alimentary tract in human subjects and experimental animals." The globules are lodged most profusely in the mesenteric lymph nodes, but also are found in the intestinal mucosa, liver and spleen. Let the pediatrician imagine how the children will grow and thrive with some of his mesenteric nodes infiltrated with globules of petrolatum!

Morgan (*J. A. M. A.* 117:1335) called attention to the symptoms of chronic indigestion often found in persons taking petrolatum for constipation for a long period. Apparently, the sigmoid and the rectum are the seat of the principal damage as the hard stool, on being compressed by the rectal contractions, forces the minute globules of oil into the crypts. This observation has been confirmed by Thiele (*South. M. J.* 35:920). Let us imagine several hundred crypts of Lieberkuhn occluded by

droplets of oil which can not be dissolved by saponification!

Three cases of chronic ulcerative colitis in children are reported. In these there was a strong suspicion that the continued use of mineral oil over several years was a causative factor. He declared that the evidence that petrolatum administered internally may be detrimental to the physiologic functions of the body and cause chronic pathologic changes in the tissues is increasing.

Why use this false oil when such animal fats, as lard, wool fat, beef fat, goose grease, are readily available and may be substituted? The new pharmacopeia lists white and yellow ointments, both of which contain about 90 per cent of petrolatum. The only exception is unguentum aquae rosae (cold cream). However, adeps benzoinated and adeps lanae are also official and may be used as excipients for the children's ointments. It seems to me that lard has a better effect on the skin than petrolatum.

I have entirely discontinued the internal use of mineral oil as a laxative, but instead prescribe the gum laxatives (psyllium, agar-agar).

Extemporaneous liniments and ointments should be made of true vegetable oils or animal fats. Even oil enemata should be composed of a vegetable oil (olive oil, cotton seed oil, linseed oil). For salves use lard and wool fat, for liniments, cotton seed oil, and olive oil only in the nose.

He concludes as follows: "Petrolatum is a foreign body to be used only as an emollient on the sound skin and like all foreign matter should be removed frequently with soap and water. Its internal use on the upper respiratory tract or in the alimentary canal is contraindicated.

JOHN ZAHORSKY, M.D.

MYRINGOTOMY

Dangers in Doing a Myringotomy. J. L. Myers. Kansas City Southwest Clin. Soc. Bull. 9:7 (April) 1943.

It is presumed that every physician knows when a myringotomy is indicated, and that all doctors are familiar with the anatomic landmarks of the tympanic membrane; also that there is a working knowledge of the use of proper instruments and surgical technic necessary to do this operation which may be followed with dire end results.

The facts that patients have died from hemorrhage following a myringotomy and at autopsy meningitis or a brain abscess has been found traceable to this operation and that labyrinthitis has been discovered due to a faulty technic, makes it plain that one should know of complications that may follow opening into the middle ear. The tympanic cavity has been likened to a grain of corn, larger at the top and smaller toward the bottom. One should be familiar with the topography of this region. The jugular bulb normally is posterior and below the tympanum; the carotid canal is anterior and below; the inner wall of this space is

covered with mucous membrane which acts as a barrier to bacteria entering the cranial cavity; the inner wall of this cavity presents the following landmarks: (1) the fallopian canal, through which passes the facial nerve, lies a few millimeters above the center from floor to roof and runs from before backward; (2) the oval window is located just below the posterior half of the facial ridge; (3) the promontory (first turn of the cochlea) is next below the oval window; (4) the round window is below the promontory and a little posterior to the oval window; (5) the stapedius muscle located on the posterior wall on a level with the oval window extends forward and inserts into the head of the stapes; (6) the chorda tympani nerve curves from posterior wall forward, passing between the handle of the malleus and the long process of the incus, and passes out through the anterior wall. To understand and avoid the danger of injuring any of these, one should study carefully the anatomy of this part of the middle ear.

DANGERS THAT MAY BE DONE

1. Chorda tympani may be severed and patient may observe inability to taste on that side of tongue. This will not last.

2. Foot plate of stapes may be dislocated by knife, catching on stapes, when it is drawn downward. Patient may become dizzy, and if opening is made into labyrinth, that may become infected.

3. Stapedius muscle may be severed. No permanent damage.

4. Facial nerve may be injured by a deep jab penetrating the facial canal. Temporary facial paralysis, or intracranial infection may follow.

5. Mucous membrane on inner wall may be cut. This opens tract for intracranial infection.

6. Round window, in some cases, may be punctured. This may cause labyrinthitis.

7. Jugular bulb, abnormally located, may be punctured with fatal hemorrhage.

8. Carotid canal, abnormally located, may be punctured with fatal hemorrhage.

In doing a myringotomy one should have good illumination on the tympanic membrane and deliberately and gently thrust the point of the knife through the membrane about 2 mm. and sweep downward and forward, making a semicircular incision from the middle of the posterior part of Shrapnell's membrane, through the middle of the posterior superior quadrant, to about the middle of the posterior inferior quadrant. By so doing, there is little chance of damage.

J. L. MYERS, M.D.

ROENTGENOLOGIC LOCALIZATION OF PLACENTA

Roentgenologic Localization of the Placenta Without Contrast Media. R. Manges Smith. Am. J. Roentgenol. 49:750 (June) 1943.

The author's purpose in this report is to show that the soft tissue of the uterus and secundines

can be visualized by the ordinary methods of roentgen ray. For this reason, various types of opaque media and various methods of their introduction have been employed during the last twenty-five years. This work had been inaugurated by Carey, who in 1914 published a short preliminary note on the determining of potency of the fallopian tubes by the use of collargol. In 1915 Rubin repeated this same work. First to employ lipiodol in this field was Carlos Heuser of Buenos Aires. Those who undertook to follow his suggestions discovered, however, that the production of miscarriage was very common. The author lists various other methods such as injection of radiopaque solution through the abdominal wall into the amniotic cavity, by means of which the outline of the fetus and contour of the placenta were made visible. For this purpose from 10 to 15 cc. of 111 sol. of U.S.P. strontium was used.

Ude and Weum used 40 cc. of 125 per cent solution of sodium iodide introduced into the bladder. Anteroposterior and lateral roentgenograms were taken and the relationship of the fetal presenting head of this bladder was taken to indicate the presence of intervening soft tissue which was presumed to be placenta. This method, however, does not provide for the diagnosis of the position of the placenta where there are abnormal presentations such as the breech or the shoulder nor does it provide for a differential diagnosis of high displacement of the head in a contracted pelvis. In very recent years an endeavor has been made by the injecting of thorotrast intravenously. But, because of radioactivity of thorotrast, this medium is not used any more.

So the author began taking roentgenograms of the fundus of the pregnant woman with soft tissue technic for the specific purpose of bringing out these details and found that in practically every instance in which placenta was located in the body or the fundus of the uterus, it could be visualized in the anteroposterior and on the lateral roentgenogram.

The author was able, by using this simple method, to locate the placenta in 1,000 cases without the use of contrast media, and the findings in the instance of placenta have been confirmed by obstetricians, both in vaginal delivery and cesarean section. The results have been achieved without disturbance of the patient or without the necessity of the injection of any contrast medium which might endanger the pregnancy or cause inconvenience to the patient and, while the method requires a certain amount of study, observation and special amount of interest on the part of the roentgenologist, yet it is in no way beyond the ability of the specialist in this field.

FRANK BIHSS, M.D.

ALLERGIC ASPECTS OF DERMATOLOGY

Allergic Aspects of Dermatology. S. W. Becker. *J. Indiana M. A.* 36:379 (August) 1943.

1. The so-called allergic skin conditions have not responded satisfactorily to orthodox allergic ther-

apy. Becker found that elimination of foods, protection against contactants and desensitizing injections of proteins were of value in only 10 per cent of the cases.

2. The physician as well as the layman has been "sold down the river" on skin tests and their evaluation. The best allergists, like the best dermatologists, now realize the limitation of skin tests and elimination diets.

3. The allergic individual is one who overacts to all internal and external stimuli. The positive skin test is merely one of these manifestations and signifies that, at the time the test was performed, the dermis was hypersensitive to the offending substance. In Becker's series, 47 per cent of 212 patients show hypersensitiveness to skin tests. In infancy and childhood, the positive reactors were mainly foods; in adult life environmental substances.

4. Becker believes that allergy is only one symptom of disseminated neurodermatitis, a term more useful than allergic dermatitis.

5. Injections of specific proteins have been a disappointment; in fact, they may aggravate the eruption.

6. Local therapy is best handled by the dermatologist, the object being to overcome the intense pruritus and inflammatory reaction.

7. Since the majority of these patients have emotional instability, emphasis should be placed on correction of social factors, reduction of nervous exhaustive states by regulation of activity, mild sedation, general ultraviolet radiation and restful vacations. If these measures do not influence the eruption, then Becker suggests that an allergist be consulted to shed additional light on the etiologic factors.

Comment: Disseminated neurodermatitis is a difficult condition to treat. While local dermatologic treatment is often of decided value, a change of occupation, residence or both is the only successful therapeutic measure. I have had numerous cases which cleared up while living in California, Texas or Arizona, relapse when returning to St. Louis for a visit. Original research by both dermatologists and allergists will help to solve the difficult problem of the so-called allergic dermatoses.

NORMAN TOBIAS, M.D.

ENGLISH MEDICAL OFFICER USES OWN BLOOD FOR TRANSFUSION ON BATTLEFIELD

The heroism of an English medical officer, Lieutenant C. G. Rob, the first British paratroop doctor to win the military cross, is described by the regular London, England, correspondent of *The Journal of the American Medical Association* in the September 11 issue.

The correspondent says that when the doctor dropped by parachute in Tunisia "he broke his leg. Nevertheless he carried on. When the blood transfusion supplies gave out he took a pint of his own blood for a patient. The citation states that he performed some one hundred and forty operations after being dropped by parachute, in many cases under enemy bombing."

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OCTOBER, 1943

EDITORIALS

KANSAS CITY SOUTHWEST CLINICAL SOCIETY ANNUAL FALL CLINICAL CONFERENCE

The Kansas City Southwest Clinical Society will present its twenty-first Annual Fall Clinical Conference in the Municipal Auditorium, Kansas City, October 4, 5 and 6. This year's conference has been compressed into a three day meeting because physicians cannot remain away from practice for a longer time.

The guest speakers, all well known, include Dr. Harrison F. Flippin, Philadelphia; Dr. Charles Gordon Heyd, New York; Dr. Frank H. Lahey, Boston; Dr. William F. Mengert, Iowa City; Dr. Edward H. Rynearson, Rochester, Minnesota; Dr. Tom D. Spies, Birmingham; Dr. Cyrus C. Sturgis, Ann Arbor; Dr. Paul Dudley White, Boston.

The subjects to be presented are timely and of interest to all practitioners. In addition to the presentations of the guest speakers, ten refresher courses will be offered covering the fields of medicine, surgery and the specialties. In this latter group, the program has been arranged so that practical matters, useful in the emergency, will be discussed. This conference has long been noted for its round table discussions and these will be retained and increased. There will be many instructive scientific and technical exhibits.

Barring the exigencies of war, the Monday evening military program will be presented by General Paul Hawley, Chief Surgeon, European Theater of Operations, and Colonel Rex L. Diveley, Orthopedic Consultant, European Theater of Operations. General Hawley's discussion will be on the work of the medical service in the European Theater and Colonel Diveley will show motion pictures which he has taken in that theater.

The last issue of the *Kansas City Medical Journal* carries the complete program.

MEDICAL RESEARCH IN WARTIME

The facts given in the recent John Wykoff Lecture by Brigadier General James Stevens Simmons should be most gratifying to the American people and to those who are proud of American medicine. There has not been a single case of tetanus among the troops immunized. The annual rate for dysentery and diarrhea in 1941-1942 was 10.19 as compared to 18.45 in 1917-1918. There have been less measles, mumps and scarlet fever than in the last war. The present outbreak of meningococcic meningitis apparently has reached a peak at about 2.7 cases per 1,000 per annum, while the peak in January, 1918, was 4.5. Despite the disposition of American troops in all parts of the world "no authentic reports have been received of yellow fever, plague, trypanosomiasis or relapsing fever."

These remarkable accomplishments have been made possible in part by the basic medical and chemical research of the last two decades. In wartime there is a tendency, fostered by patriotism and emotional stress, to push aside all things not directly connected with the war effort. The fallacy of this attitude is well shown in a statement in the annual report of the John and Mary R. Markle Foundation for 1942. "It is interesting to note that the first and third of these developments (plasma transfusion and the sulfonamide drugs) originated in basic nonwar-connected investigations, although they were later stimulated and accelerated by the war emergency. If fundamental studies of this nature had been restricted in the past, as at present, the war medicine of today would be lacking in some of its most important attributes."

Let us not be nearsighted. We are fighting for a better world in which to live. A part of this better world is freedom from disease. This freedom in the field of medicine which is destined to take its place beside the other Freedoms of the Atlantic Charter can be obtained only by the continued search for the basic phenomena of disease. The curative and preventive medicine of the future depends on the basic research of today. Time, money, and man power must and can be found, even in the midst of an economy converted to the needs of war, to continue the march of medical research and preparation for the future.

MEDICAL AND PUBLIC OPINION MOUNTING AGAINST HEALTH BILL

During the last two months there has been a mustering of medical and public opinion against the Wagner-Murray-Dingell bill which indicates an awareness by the medical profession and the public of the tremendous stake that they have in this legislation, *The Journal of the American Medical Association* for September 4 points out. *The Journal* calls for unity in the medical profession in the attack on the technic for rendering medical service proposed by this legislation. *The Journal* says: "Hearings on the Wagner-Murray-Dingell bill,

which was fully analyzed by the Bureau of Legal Medicine and Legislation of the American Medical Association and commented on editorially in *The Journal of the American Medical Association*, June 26, will no doubt be held in the near future, probably after Congress has completed the new tax bill. According to the *United States News*, advocates of the expansion program for social security assert that it has caught the popular fancy, that pressure for its adoption is increasing daily, that the plan is a big step toward one of the Four Freedoms of the Atlantic Charter—Freedom from Want—and that Congress would face a storm of public criticism if it failed to approve the main provisions of the plan. On the other hand, opponents assert that the program would constitute a capital levy of ruinous magnitude on United States business, that even with the 12 per cent payroll tax the plan would be underfinanced, and that, should Congress enact such a bill, a dominant bureaucracy would be created which would end free enterprise in the United States and alter the whole way of American life.

"The editorial published in *The Journal* on June 26 emphasized that this bill is an evolution of the National Health Conference of 1937. It pointed out further that the measure was prepared without consultation with the medical profession, that it would make the Surgeon General of the United States Public Health Service a virtual 'gauleiter' of American medicine and that it would be, in fact, the acme of bureaucratic control of medical service. In the two months that have passed there has been a mustering of medical and public opinion against this measure, indicating awareness by the medical profession and the public of the tremendous stake that they have in this legislation. The editor of the McKeesport (Pa.) *Daily News* states the case succinctly: 'It would place the doctors under political control and provide for the mass of the people physicians who are politically amenable rather than those with superior abilities and skills. And would deaden one of the most highly regarded professions the world has ever known. . . . Success of bill 1161 and the destruction of the freedom of American medicine would be the come-on for other broader, more revolutionary schemes to circumscribe the American people.'

"The periodical *America* says, in a statement by one of its editors: 'Now, will public regimentation of health servants operate to preserve the profession and thus ultimately help to preserve the body politic? It seems that such action—as, for example, that contemplated in Senate bill 1161—would create a new class of political doctors. And in America political classes are commonly subject to the influence of political practice, in seeking emoluments and avoiding burdens, unless we take the rare case of the unusually elevated individual. The system as it works does not raise personal ideals. But doctors without high personal ideals are a menace, both to the patient and to the public.'

"An editorial in the Middletown (Ohio) *News Signal* says: 'The Wagner bill will be considerably

modified, but some of its worse features may become law unless it is seen in its true light. It is part of a program, now well advanced, to enslave the individual to the state. In this process he gradually loses his adult self reliance, lapses toward infancy and then degenerates into a willing slave of government.'

"The Charleston (S. C.) *News-Courier*, in a sarcastic editorial contribution, emphasizes the political aspects of this measure. It suggests that the medical administrators under the Wagner-Murray-Dingell bill be elected by popular ballot. The medical administrator would have the right to appoint the doctors and assign the cases. He could expect the support of the doctors that he appointed to help him get reelected, and the doctors would use their automobiles and C cards to help haul voters to the polls. They could also contribute to a fund to buy radio time for campaign speakers. Any doctor who worked against the medical director's reelection might find it difficult afterward to practice. Appointments in the medical colleges would, of course, be handled like other political patronages so that deserving party members could have their sons trained free of charge. Incidentally, it is pointed out, a lot of useful confidential information could be picked up by the doctors on their rounds that would help the party to stay in office.

"And the Jackson (Tenn.) *Sun* comments metaphorically: 'We are indeed a sick nation if we are willing to swallow such a pill. After swallowing it we would find that, instead of taking a progressive stimulant, we had taken a political opiate intended to dull our senses. . . .'

"The editor of the *Buffalo News* suggests that the proposed measure provides for a setup 'closely approaching that in the totalitarian nations.' He urges, furthermore, that the people, if they have put upon them the full measure of social security proposed by the New York senator, 'soon would be in a condition to yield themselves up as wards of the state.'

"At its meeting held in Chicago on August 26, the American Bar Association gave its approval to a resolution opposing any legislation now before Congress which 'seeks to establish federal control of the medical profession and the regimentation of doctors and hospitals.'

"The periodical *Medical Care*, edited by Mr. Michael Davis, suggests that the Wagner-Murray-Dingell bill was introduced on the demand of organized labor for the expansion of social security and that the timing may be accounted for by the probability that realists who are pushing this bill are more hopeful of dramatizing an issue for 1944 than of congressional action this year. The editorial indicates, incidentally, that the bill goes beyond the plans put forth by the President and the Social Security Board.

"In his editorial Mr. Michael Davis suggests that American physicians can now be divided into three groups: those who support the policies of the American Medical Association, those who differ

with them but who keep silent and those who differ and say so publicly. Mr. Davis takes great encouragement from the statement recently released by Drs. John Peters, Channing Frothingham and others which apparently indicates to him a division in the medical profession and a gathering of strength against the policies of the American Medical Association.

"Already an announcement has been made in the press that Senators Wagner and Murray propose to have early hearings on this measure. Certainly the Board of Trustees and the newly established Council on Medical Service and Public Relations will give early consideration to the manner in which the American Medical Association is to be efficiently represented in the proposed hearings.

"Regardless of any other considerations on which there might be a difference of opinion among the vast majority of physicians of the United States, unity is demanded in the attack on the technic for rendering medical service proposed by the Wagner-Murray-Dingell bill. Senator Wagner in his public statement said, 'I do not claim this bill is in any sense a perfect instrument; it is offered simply as a basis for legislative study and consideration.' Let us take the Senator at his word and prove to him and his colleagues, by a complete and forceful presentation of the points of view of American medicine, how far from perfect is the measure that he has proposed."

NEWS NOTES

Dr. William F. McCarthy, Health Commissioner of Jackson County, spoke before the Independence Rotary Club on August 16 on "Safeguarding Public Health in Time of War."

An honorary degree of Doctor of Science was given Dr. Joseph Grindon, Sr., St. Louis, by St. Louis University at a surprise party in honor of his eighty-fifth birthday on August 20. Dr. Grindon was guest at a dinner given in his honor by the St. Louis Dermatological Society at the Coronado Hotel, St. Louis, August 30.

A clinic for crippled children of eleven counties was held at the county health department offices, Springfield, on August 16. The counties represented were Greene, Hickory, Dallas, Stone, Polk, Webster, Douglas, Wright, Ozark, Taney and Christian. Dr. Robert Schaffler, Kansas City, was in charge of the clinic.

The U. S. Public Health Service has taken over the old Marine Hospital in St. Louis for a hospital for the treatment of venereal disease. The new hospital will be called the Midwestern Medical Center and will serve patients from St. Louis, Missouri and Southern Illinois.

DEATHS

Horrom, George Wesley, M.D., Rolla, a graduate of the Medical College of Indiana, Indianapolis, 1894; former president and honor member of the Phelps-Crawford County Medical Society; aged 73; died July 9.

Hawkins, N. William, M.D., Farmington, a graduate of Washington University School of Medicine, 1926; former president of the St. Francois-Iron-Madison-Washington-Reynolds County Medical Society; Fellow of the American Medical Association; aged 42; died July 28.

Rambo, William Waldo, M.D., Jefferson City, a graduate of Washington University School of Medicine, 1926; Fellow of the American Medical Association; president of the Cole County Medical Society; aged 50; died August 9.

Stumberg, B. Kurt, M.D., St. Charles, a graduate of the Maryland Medical College, Baltimore, 1900; former president of the St. Charles County Medical Society; former Councilor of the Missouri State Medical Association; aged 68; died August 20.

Grosse, Louis W., M.D., St. Louis, a graduate of St. Louis University School of Medicine, 1906; Fellow of the American Medical Association; member of the St. Louis Medical Society; aged 59 years; died August 20.

Taussig, Fredk. Joseph, M.D., St. Louis, a graduate of Washington University School of Medicine, 1898; Fellow of the American Medical Association; member of the St. Louis Medical Society; aged 71; died August 21.

Hanna, Minford A., M.D., Kansas City, a graduate of the Kansas City Medical College, 1903; Fellow of the American Medical Association; former president of the Jackson County Medical Society; aged 65; died August 24.

Newman, Samuel Elijah, M.D., St. Louis, a graduate of Miami Medical College, Cincinnati, 1902; Fellow of the American Medical Association; member of the St. Louis Medical Society; aged 65; died July 17.

INCIDENTALLY

FROM THE EXECUTIVE SECRETARY

Some members of the medical profession may contend that it is not in the realm of medical ethics for individual physicians to take active part in community and civic affairs lest such action be termed advertising.—On the other hand, many assert that the broad and extensive educational training together with the unparalleled every day experiences in human relationships of the physician place him in a duty-bound position to use these advantages in efforts directed toward the betterment of his community.

The value of scientific medicine to the public is dissipated where conditions are not favorable to its wide distribution.—Such a situation may be caused by political control or influence over the practice of medicine, by lack of knowledge on the part of the public as to what constitutes scientific medicine or by the failure of some physicians to consider each patient as an individual economically

as well as medically.—Is it reasonable to assume that the public's regard for the medical profession is determined to some degree by the experiences of the people in dealing with individual physicians?

In the various communities over the state many physicians probably have been invited to serve on civic committees, school boards and sundry commissions.—Should not a physician assume some of these responsibilities as a part of his civic obligations?—Are not there indirect opportunities offered here to organized medicine?—Could not such activities assist in removing the bucket from over the medical light?

In some counties medical societies, through their committees, are cooperating actively with community agencies in numerous efforts to promote the public welfare.—This takes time and effort on the part of those physicians participating but the potential results to the medical profession should more than justify such activities of the physicians.

Is it not true that there are some responsibilities that one in authority may delegate to subordinates but others that can not be successfully delegated?

It has been stated that the possibility of securing unity within organized medicine is so remote as to cause many qualified physicians to question the desirability of membership in medical societies.—Perhaps the Wagner-Murray-Dingell Bill may serve as a catalyzer in unifying the profession behind imperative efforts to preserve the private practice of medicine in this county.

With the beginning of another fall there is no evidence indicating smoother sailing for the medical profession.—Storm clouds appear to be approaching closer and closer to the domain of the private practice of medicine.—The dispersment of the maelstrom will necessitate more extensive organizational activities.—The basic unit in these activities is the county medical society.—It is a link in the chain and determines the strength of the whole.—Is it not imperative that medical societies, large and small, begin at once to study and plan their strategy in defense of the democratic heritage in the rendition of medical services?—Should not each physician write his Congressman and tell him how he feels about the medical provision of the Wagner Bill, Senate Bill 1161?—This Congressman is representing you in Washington.—How many of your patients and friends will want this bill passed with its present medical and hospital provisions when they have been informed of the cost to them in additional taxes and the denying to the American public of a free choice of physician?

ORGANIZATION ACTIVITIES

COUNCIL MINUTES

The Council of the Missouri State Medical Association met at the Coronado Hotel, St. Louis, August 22, at 10:30 a. m., Dr. W. A. Bloom, Fayette, Chairman, presiding. Those present were Drs. A. S. Bristow, Princeton; H. B. Goodrich, Hannibal; Joseph C. Peden, St. Louis; R. B. Denny, Creve Coeur; W. A. Bloom, Fayette; R. W. Kennedy, Marshall; H. L. Mantz, Kansas City; Wallis Smith, Springfield; Paul Baldwin, Kennett, Councilors; A. W. McAlester, Kansas City, President; R. L. Thompson, St. Louis, Secretary-Editor; C. E. Hyndman, St. Louis, Treasurer; Robert Mueller, St. Louis, Chairman, Procurement and Assignment Service, and President, St. Louis Medical Society; C. Souter Smith, Springfield, President, Greene County Medical Society; Ralph A. Kinsella, St. Louis, and Nathan A. Womack, St. Louis, members of the Committee on Scientific Work; M. L. Gentry, Jefferson City, State Board of Health; Mr. Raymond McIntyre, St. Louis; Executive Secretary.

The minutes of the last meeting of the Council were approved as published in THE JOURNAL.

A letter from the St. Louis Medical Society recommending the appointment of Dr. Joseph C. Peden, St. Louis, as Councilor for the Third District to fill the unexpired term of Dr. Curtis H. Lohr, who resigned to enter military service, was read. The Council voted to designate Dr. Peden as Councilor for the Third District.

The Council requested that minutes of each Council meeting be sent to members of the Council as soon as feasible after each meeting.

Dr. Goodrich reported that the Committee of the Council on Insurance for Employees of the Association had several plans before it which were being considered.

The Committee on Sectional Meetings recommended that a postgraduate war medical program using both civilian physicians and physicians in the service be held this fall at an 8th Councilor District meeting in Springfield. It was further suggested that the Councilor of the 8th District work with the Committee on Postgraduate Course of the Association in developing a program that would cover certain war medical subjects as well as certain civilian medical subjects and this program be submitted to the proper authorities of the Army and Navy for approval. A motion was passed to this effect.

It was voted to have at least one Councilor District meeting in each district this winter or next spring, the programs to be of a strictly business nature for consideration of the problems facing organized medicine in securing better medical service for the people of Missouri. The following committee was appointed to develop a program for sub-

mission to the Councilors for these meetings: Drs. C. E. Hyndman, Chairman; A. W. McAlester, W. A. Bloom, Morris B. Simpson, James R. McVay, Mr. T. R. O'Brien and Mr. Raymond McIntyre.

Dr. Robert Mueller, State Chairman of Procurement and Assignment, spoke on the present status of this service and answered questions of individual Councilors.

The Annual Session was discussed and it was decided to have the meeting on April 23, 24 and 25, 1944, in the Municipal Auditorium, Kansas City, with headquarters at the Muehlebach Hotel. It was decided to have the session similar to the 1943 session with an additional half day scientific session on Tuesday morning with the House of Delegates meeting on Tuesday afternoon.

The matter of members in arrears in dues was discussed and the Executive Secretary was instructed to contact secretaries of county medical societies in an attempt to bring all suspended members into active membership. It was voted to request the Committee on Constitution and By-Laws to recommend an amendment which would give the Association power to drop members who have been suspended for nonpayment of dues for an unreasonable time.

It was voted that the Council Committee on Councilor District organizational meetings act with the Community Health League in regard to the Wagner Bill and other national legislation concerning which Congressmen should be contacted.

The Committee on Public Policy and Public Relations presented the following recommendation: The Committee on Public Policy and Public Relations recommends the employment of a public relations counsel and requests the Council to make such appointment and appropriate such funds as may be necessary. The Council moved to study this proposal and to delay action until plans were better formulated, in the meantime the Executive Secretary to act as public relations counsel.

Dr. M. L. Gentry, Jefferson City, Director, Division of Child Hygiene, State Board of Health, presented the plan of the U. S. Children's Bureau for the maternity and obstetric care of wives and the pediatric care of children of men in service. He gave an opinion of the Attorney General that the interpretation in Missouri included in the persons who could give this care M.D.'s, midwives, osteopaths and obstetric nurses.

After discussion by Drs. Mantz, Hyndman, Peden, Bristow and Gentry, it was decided that the Council should take no action on the report of Dr. Gentry. Dr. Gentry was thanked for presenting the matter to the Council.

Dr. Mantz invited members of the Council and members in their districts to attend the meeting of the Kansas City Southwest Clinical Society in Kansas City on October 4, 5 and 6.

It was decided to hold the next Council meeting the latter part of October.

On motion it was decided that the Committee on

Postwar Planning should make a preliminary report to the Council prior to the meeting of the House of Delegates.

W. A. BLOOM, M.D., *Chairman.*

COMMITTEE ON PUBLIC POLICY AND PUBLIC RELATIONS

The Committee on Public Policy and Public Relations met August 22 at the Coronado Hotel, St. Louis, at 9:00 a. m., with editors of county medical society bulletins as their guests. Those present were Drs. Morris B. Simpson, Kansas City, chairman; Donald M. Dowell, Chillicothe; Robert Mueller, St. Louis, members of the Committee; Vincent T. Williams, Kansas City; Rogers Deakin, St. Louis; Paul F. Cole, Springfield; H. E. Petersen, St. Joseph; C. P. Dyer, St. Louis; R. L. Thompson, St. Louis, and Mr. T. R. O'Brien, St. Louis.

Dr. Simpson stated that the purpose of the meeting was to formulate a policy for publications, especially during legislative sessions; not to curb editors of county medical society bulletins but to obtain greater cooperation between the bulletins and the State Association. The value of the county medical society bulletin was stressed and it was suggested that present bulletins have greater dissemination and that more bulletins, possibly by several county medical societies combining for the purpose, would be valuable.

Editors of county bulletins were requested to send the bulletins to officers of the Association.

Dr. Williams expressed the opinion that the lay public should be contacted more and that better interpretation of the medical profession should be established, especially in Washington.

Dr. Dyer brought out the value of material appearing in newspapers and suggested paid advertising if necessary.

Dr. Dowell discussed the difficulty of combating the osteopath in acquainting the public with public health work.

Dr. Deakin pointed out that the medical profession should realize that they are not specialists in public relations and suggested that the profession needed advice in this line. He stated that he was in favor of the bulletins looking more to the Committee on Public Policy and Public Relations for type of material to appear in the county medical society bulletins.

Dr. Petersen expressed his approval of the county medical society bulletins looking to the Committee for guidance in material to go in the bulletins.

Dr. Thompson pointed out that in order to obtain space in newspapers, material must have real news value.

Dr. Cole spoke of the value of the bulletins in that they can carry material of interest to the member which has no place in a scientific journal such as THE JOURNAL of the Association.

Mr. O'Brien stated that politics was a part of public relations for the medical profession. He

pointed out that material appearing in magazines reaching the general public is dramatic and that it is necessary for it to be so to get to the public.

Dr. Mueller expressed the opinion that the general public did not know the difference between the M.D. and other healing cults and suggested that the best method of acquainting the public with the difference was to point out the accomplishments of the medical profession in such things as increased longevity and the lowering of mortality rates.

The following motion was passed: The Committee on Public Policy and Public Relations recommends the employment of a public relations counsel and requests the Council to make such appointment and appropriate such funds as may be necessary.

It was decided that the work connected with the Constitutional Convention be left to the Community Health League.

MORRIS B. SIMPSON, M.D., Chairman.

MISCELLANY

VENEREAL DISEASE CONTROL EDUCATIONAL CAMPAIGN

An intensive venereal disease control educational campaign is being conducted in St. Louis and St. Louis County to run through October. It is sponsored by the State Board of Health of Missouri in cooperation with the U. S. Public Health Service, the Missouri Social Hygiene Association and the St. Louis and St. Louis County Health Departments.

A large public inaugural meeting under the auspices of the Woman's Advisory Committee for Civilian Defense was held September 13 at 10:30 a. m. at Kiel Auditorium. The guests of honor were Dr. James Stewart, State Health Commissioner; Dr. R. R. Wolcott, P. A. Surgeon, U. S. Public Health Service; Dr. J. F. Bredeck, Commissioner, St. Louis City Health Department; Dr. E. C. McGavran, Commissioner, St. Louis County Health Department; E. G. Steger, Function Chief of Health and Welfare Function; and Dr. Paul J. Zentay, St. Louis, Vice President, Missouri Social Hygiene Association.

Dr. J. R. Heller, Jr., Assistant Surgeon General, U. S. Public Health Service, in charge of the Division of Venereal Diseases, gave an excellent address on the various aspects of venereal disease control. He stated that the U. S. Public Health Service estimates that 3,200,000 persons in the United States are infected with syphilis and from three to five times that number with gonorrhea.

The committee in charge of the campaign was appointed by the Missouri Social Hygiene Association under the chairmanship of Dr. Rogers Deakin, St. Louis, formerly first vice president of that association and at the present time a special consultant to the U. S. Public Health Service and chairman of the Committee on Control of Venereal Disease of the Missouri State Medical Association.

All media of publicity is being used to enlist the interest and support of the community. Leaflets may be obtained in any quantity by writing or calling the Missouri Social Hygiene Association, 3713 Washington Boulevard, St. Louis; telephone, Jefferson 5345. Emphasis is being placed on the sulfathiazole treatment for gonorrhea which had not yet been presented to the

public on any large scale and offers a subject that is new and dramatic. Missouri is one of the first states to set up a gonorrhea program and to provide sulfathiazole tablets free to the physician requesting them for patients unable to pay.

HEARING ON PROFESSIONAL PROBLEMS

Professional men, farmers, live stock men, manufacturers and small businessmen voiced a common plea before a delegation of eighteen northwest congressmen who staged the first hearing of the sort ever held, for their benefit, in Minneapolis, on August 16. The states represented were Minnesota, Wisconsin, Iowa, North Dakota and South Dakota.

In substance the plea was this: We all realize there is a war to be won. We recognize the necessity for emergency regulation. But we want those regulations made by men who have some familiarity with our problems and with the advice of our representatives so that they may help, and not hinder, us to do our part in the war effort. Above all we are opposed to government by bureaucracy. We fear that bureaucracy is becoming entrenched in Washington, that it will destroy individual initiative in business and the professions alike and do away with representative government in the United States.

The similarity of complaints received from all sides by the congressmen was so striking that one of them urged all to make common cause in opposing the trend toward bureaucratic collectivism.

The hearings began on Monday morning at 9:30. More than 2,500 participated during the first day.

August Andresen, congressman from Minnesota, arranged the conference and acted as chairman.

Agriculturists of all kinds, from truck gardeners to farm machinery dealers, presented their views in the morning. The afternoon hearing was devoted to merchants, wholesale dealers, small business men and manufacturers, and the evening to doctors, dentists, hospitals and druggists.

J. B. Slocumb, St. Paul, executive secretary of the Minnesota Pharmaceutical Association, presented the statement for the druggists in the evening; Dr. Lester Webb, Fairmont, Minnesota, president of the Minnesota State Dental Association, was spokesman for the dentists; Rev. L. B. Benson, St. Paul, president of the Minnesota State Hospital Association, for the hospitals; and Dr. A. W. Adson, Rochester, Minnesota, past president of the Minnesota State Medical Association and delegate to the American Medical Association, for the physicians.

All of the questions and comments by the congressmen were concerned with medicine and directed toward observations and suggestions made in the statement presented by Dr. Adson (which appears in this issue) which was endorsed by representatives of the five medical associations of Wisconsin, Iowa, North and South Dakota and Minnesota. Delegations from each of these associations were present and were introduced by the chairman.

Following is a digest of extemporaneous remarks made in the course of the discussion on medical service.

Congressman Andresen said he was sure that the members of Congress present subscribed to everything Dr. Adson had suggested with the possible exception of a Department of Health to be headed by a physician-cabinet officer. He said:

"We may be a bit skeptical about that because it seems to be the procedure to place people who know nothing about the work, at the head of government departments. We are just a little bit afraid they might put Dr. Harry Hopkins or Madame Perkins in the job."

Congressman Karl Mundt, of South Dakota, pointed out that all of the groups they had been listening to all day were affected by the trend toward bureaucracy and their difficulties were remarkably alike. He suggested

that a unified attack be made by all of them from "air, sea and land."

"Could you not," he asked, "call together the heads of all your professions to help us turn our faces away from bureaucratic collectivism? It would be a case of doctors for doctors against the ill-organized machinery now operating; but you would find the majority down in Washington glad to cooperate with you if you would unite and fight as a group, with the strength of numbers, against state socialism."

Dr. Adson responded that physicians have paid very little attention until recently to public affairs, but that this summer a new Council on Medicine Service and Public Relations had been created by the House of Delegates of the American Medical Association and it is the hope of all that something effective can be accomplished by medical men and their colleagues in the other professions in cooperation with the Council. Physicians are beginning to appreciate the fact that they have a special responsibility and interest in opposing regimentation and in fighting to reestablish the traditions of our democracy.

Congressman J. P. O'Hara of Minnesota brought up the new Wagner bill, introduced shortly before the recess. He pointed out that the bill will have a tremendous appeal and that arguments for it will be on the basis that many people cannot now afford medical service and that the government must provide that service. He asked how the doctors would answer that argument.

Dr. Adson, in answer, noted that the bill called for three billion dollars annually to be taken out of the paychecks of workers, as deductions and increased cost of consumer goods. He emphasized the point that the sum set aside for administrative expense was the same as that allocated for professional service and that represented 20 per cent of the total budget. The proposed program would kill initiative, free enterprise and research. Physicians seeking appointments to medical bureaus would be so busy playing politics that it would be difficult to find time to practice good medicine. He stated further that his observation of compulsory health insurance in Germany was that it resulted in a deterioration in medical service.

"We believe," he said, "that medical service for relief patients should be conducted as it is here in Minnesota. The state welfare agency operates through the local county units in close cooperation with the physicians in order to maintain the standards of good medical service and grant the patient the free choice of physician. We are studying and will foster plans of voluntary prepayment medical services for those in the low income groups when sufficient demands are made. However, we believe that for effectiveness and economy they should be on a local basis, in response to a definite local need and with local responsibility for standards and service."

Congressman W. H. Judd, from Minnesota, himself a physician, said it is true that from about 10 to 15 per cent of the people in this country do not get adequate medical service. The trouble is that the new legislation is designed to scrap the entire system now in operation which gives the other 85 per cent good medical service in order to help 10 to 15 per cent of the people. He predicted that physicians could and would get together to take care of the 10 to 15 per cent without any necessity for wrecking the system which provides so well for the other 85 per cent. He commended physicians of this section for taking the lead in finding solutions for the problem.

"The medical and dental professions of the United States have a chance to secure the finest service anywhere in the world for all the people," he said, "and without regimentation."

In closing, Congressman Andresen endorsed Congressman Mundt's suggestion that the professions unite forces to protect their professional standards and promote their common purpose.

THE PHYSICIAN AND MEDICAL CARE

A. W. Adson, M.D.

Rochester, Minn.

We doctors from the states of Wisconsin, Iowa, North and South Dakota, and Minnesota appreciate this opportunity to talk with you, our Senators and Representatives at the national capital, since we live in the communities you represent and share with our neighbors the same responsibilities, vicissitudes and enjoyments that you share with them. The war must be won; our sons and daughters are on the battlefronts, we accept heavy taxation, we buy bonds, we make sacrifices, we work long hours and endure sleepless nights with the hope that our efforts will preserve the original ideals of Americanism. We are conscious of the fact that emergency regulations become necessary in order to concentrate productive forces in behalf of the war effort. But we hope that the emergency measures which have taken over so many of our daily activities, through directives from bureaus in Washington, will not be allowed to continue when the emergency ceases. We cherish the privilege of individual initiative, as do our neighbors, the farmers, the laborers, the merchants, the industrialists, and colleagues in other professions. Economy must be practiced, state rights must be preserved, if we are to pass on the heritage to our sons and daughters that once was passed on to us by our fathers who fought to maintain a true democracy.

We physicians and surgeons are servants of the public. We accept the responsibility of preserving the health of our communities, and we are accustomed to render relief to those that are sick, irrespective of color, creed, nationality or economic status, and regardless of the time of day such demands are made. In this present emergency, our first responsibility is to supply physicians for the armed forces in order that our sons and daughters will have medical aid when the emergency arises, for there is nothing too good for those who are making the supreme sacrifice to maintain a free country. We, likewise, have a responsibility in supporting the Veterans' Administration in order to supply the additional medical personnel and hospital facilities for the injured soldier when he returns for reconstruction and rehabilitation. The civilian at home, who maintains our economy, supplies the food, clothing and material of war, must be kept physically fit and, therefore, he is entitled to the best that medical science has to offer. During the emergency, luxury medical attention will have to be curtailed in order to make it possible for the physician to meet the more urgent demands of those who are in need of medical service.

The physicians of the United States, through their national medical organization, working in conjunction with representatives of the armed forces and the War Manpower Commission, have helped to establish the Procurement and Assignment Service. This service has accumulated data on the qualifications of every physician, determined the need for his services in the community and whether or not he is available for the army, navy, or public health service. This information is transmitted to the surgeons general of the respective services in order that medical personnel can be procured on a voluntary basis and be assigned to services for which they are best fitted. We older physicians, who have been declared essential to our

Presented at a hearing in Minneapolis, August 16, before Senators and Congressmen from Wisconsin, Iowa, North Dakota, South Dakota and Minnesota. Dr. Adson acted as spokesman and representative of medical associations for the states represented.

communities and those of us who have not been able to meet the physical qualifications of the armed forces, will take care of the patients of our colleagues during the emergency. We hope that the military demands for physicians will not be in excess of those that can be utilized. We are extremely desirous that those physicians who have entered the medical corps of our armed forces eventually will return to their respective communities and patients. Since their practice with the armed forces will differ considerably from that of civilian practice, it is our hope that our government will provide graduate training following hostilities in order to prepare these men to render efficient and better medical service to their patients on their return.

The accelerated programs of medical education are necessary during an emergency, but it is hoped that the programs of medical education will be reestablished at the close of the war in order that adequate time may be given to a full program of education and medical research.

As injured veterans return from army and navy hospitals, greater demands will be made on our veteran facilities. This will require additional hospital beds and personnel. Since these men and women have been transferred from the usual civilian's life to that of a disabled veteran's life, two results may occur. The one, voluntary hospitals will be confronted with bed vacancies and operating losses; the other result is the danger of building veterans' hospitals in excess of needs. We, as physicians, would like to see the Veterans' Administration procure army hospitals that are no longer needed following the cessation of hostilities. Furthermore, it undoubtedly is possible, in some instances, to transfer patients from veterans' hospitals to civilian hospitals; for example, tuberculous patients from veterans' hospitals to civilian tuberculous hospitals, thus making additional beds available for returning soldiers. This transfer would permit tuberculous veterans to be treated by competent physicians in locations close to their relatives and friends. Likewise, it is possible to transfer patients who are suitable for domiciliary care from veterans' hospitals to homes provided with care for the invalid, again making available additional beds. Such changes would help the nation to economize without lowering the standard of medical service which we are anxious to see maintained for our returning veterans, whether they be hospitalized in a veterans' facility or under the care of the physicians of the community.

In conducting the medical service for our civilian population, physicians find that they are confronted with three groups of persons: (1) those who are in a position to engage, for a fee, the service desired, (2) those with lower incomes who are able to procure the average medical services, but who do not have reserves for extended illnesses requiring long periods of hospitalization, and (3) the group of less fortunate ones who must depend on friends and communities for their medical service and hospitalization. In the third group, there are those who have no funds and depend on relief agencies for all their wants of life.

In order to speed the recovery of the patient, one factor is extremely important; namely, the patient-physician relationship. The patient must have confidence in his physician and, therefore, he is entitled to the free choice of his physician. This is just as important for the patient of poor economic status as it is for the one who is situated in a more favorable position.

Physicians are conscious of the problems that confront those with low incomes. A prolonged illness becomes an excessive burden and all physicians, on repeated occasions, have given their services graciously. However, we think it wise that many individuals who earn good incomes should be encouraged to budget

their medical expenses along with their other expenses. We also would encourage those same individuals to take advantage of the hospitalization programs and to procure their own disability insurance. In some instances, physicians have banded themselves together in order to offer a prepayment medical service. However, since the requirements of various groups within a community differ, prepayment medical service plans have not been universally successful. Although several plans are in operation and their proponents are struggling with their problems, it appears that a voluntary arrangement will render a more satisfactory medical service than one established by Federal agencies and controlled by political bureaus.

Medical service rendered to the injured workman by state industrial commissions has been reasonably well conducted, for which they should be commended. However, it is our duty, as physicians, to see that the injured workman receives the most efficient type of medical service, for the sooner an injured workman is returned to his occupation, the less likely it is that he may become a chronic invalid and a charge to the community.

Patients requiring relief should be given medical care along with the other necessities of life, the responsibility of which may belong to the county alone, or the state and county, or, in certain instances, to the nation, state and county. The medical service to those patients can be more efficiently rendered when administered by local relief agencies which can become familiar with the circumstances surrounding each patient. Local physicians appointed as an advisory committee to the relief agency increase the efficiency of this program, since in most instances one or more of the physicians are acquainted with the patient seeking medical aid.

The temporary assignment of physicians from the United States Public Health Service to communities deprived of physicians or to communities where there has been a sudden influx of war workers, as an emergency measure, is commendable, but it would be unwise to establish permanent arrangements of this nature since it would deprive physicians returning from military service of their former location and of the opportunity of seeking new locations.

We, as physicians, are confused by the many directives issued by the various bureaus in our national capital. We, likewise, are at a loss to understand why legislation initiated relative to medical measures is referred to a variety of committees. It would appear to us that medical service rendered to the civilian population as a whole would be more effectively accomplished if it could be centralized in one department. The health of the nation embraces so many activities and allied professions that it would appear to us that it would justify the legislative and administrative branches of our government to create a Department of Health, headed by a cabinet officer, a Secretary of Health. We would like to suggest, further, that the legislative branch of our government create standing committees on public health and welfare in both houses, the Senate and the House of Representatives, in order that all legislation pertaining to health and welfare can be adequately reviewed by committee members who are informed on problems of health.

In conclusion may I reiterate that we physicians are civilians; we are your neighbors, who share the same responsibilities, vicissitudes and enjoyments that you share. We are conscious of the fact that we act as servants of the public and accept the responsibility of preserving health and offering relief to those that are sick. We accept our responsibilities, but we plead with you to represent us, to exercise economy, to preserve free enterprise, to preserve state rights and to preserve a free country and a home for our soldiers to come back to when this war is over.

COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL 1943

(SOCIETIES WHICH HAVE PAID DUES FOR ALL MEMBERS
AND DATE PLACED ON HONOR ROLL)

- Perry County Medical Society, November 21, 1942.
Benton County Medical Society, November 27, 1942.
Chariton County Medical Society, November 28, 1942.
Camden County Medical Society, December 3, 1942.
Miller County Medical Society, December 3, 1942.
Barton County Medical Society, December 4, 1942.
Scott County Medical Society, December 8, 1942.
Montgomery County Medical Society, December 9, 1942.
Moniteau County Medical Society, December 14, 1942.
Cass County Medical Society, December 17, 1942.
Ste. Genevieve County Medical Society, December 21, 1942.
Howard County Medical Society, December 24, 1942.
Webster County Medical Society, December 29, 1942.
Carter-Shannon County Medical Society, January 7, 1943.
Clinton County Medical Society, January 15, 1943.
Macon County Medical Society, January 28, 1943.
Dallas-Hickory-Polk County Medical Society, February 3, 1943.
Holt County Medical Society, February 24, 1943.
Pulaski County Medical Society, February 26, 1943.
Newton County Medical Society, March 5, 1943.
Morgan County Medical Society, March 10, 1943.
Dent County Medical Society, April 2, 1943.
Pettis County Medical Society, April 9, 1943.
Jasper County Medical Society, June 1, 1943.
Jefferson County Medical Society, June 3, 1943.
Platte County Medical Society, June 19, 1943.
Cooper County Medical Society, September 1, 1943.
De Kalb County Medical Society, September 3, 1943.
Mercer County Medical Society, September 3, 1943.
Henry County Medical Society, September 7, 1943.
St. Charles County Medical Society, September 10, 1943.

ASSOCIATE EDITORS: COUNCILORS OF THE TEN COUNCILOR DISTRICTS

FIFTH COUNCILOR DISTRICT

W. A. BLOOM, FAYETTE, COUNCILOR

Fifth Councilor District Meeting

The Fifth Councilor District held a clinic session in collaboration with the Boone County Medical Society at the Ellis Fischel State Cancer Hospital, Columbia, on September 8. Approximately sixty-five physicians attended the meeting.

The morning scientific program was observation of an operation for large bowel cancer performed by Dr. Everett D. Sugarbaker of the Hospital staff.

Following lunch, which was served at the Hospital, eight patients under treatment were presented for observation and discussion.

From 3:00 p. m. to 4:30 p. m. a discussion of carcinoma of the colon was presented by members of the hospital staff. Dr. Everett D. Sugarbaker reviewed the surgical aspects of the treatment given patients and presented statistics which exemplify the fine work being carried on at the State Hospital for the treatment of indigent cancer patients.

Dr. L. V. Ackerman discussed a number of surgical cases from the pathologic standpoint and presented slides to illustrate his discussion.

Dr. David V. LeMone explained various indications of carcinoma as shown by roentgenograms.

Following the scientific program, Dr. W. A. Bloom, Fayette, Councilor of the Fifth District, expressed appreciation for the cooperation of the hospital staff and the Boone County Medical Society in making the program possible. He complimented those associated with the hospital on the excellent service being rendered the State of Missouri.

A number of Medical Officers who were guests at the meeting were introduced. Dr. R. B. Denny, Creve Coeur, Councilor of the Fourth District, and Dr. C. P. Dyer, Webster Groves, Editor of the *St. Louis County Medical Bulletin*, were introduced.

Dr. David V. LeMone, Columbia, President of the Boone County Medical Society, spoke briefly.

Mr. T. R. O'Brien, St. Louis, gave a short talk on the Community Health League activities.

Dr. James Stewart, Jefferson City, State Health Commissioner, spoke briefly on the United States Children's Bureau program for obstetric and maternity care.

Mr. Raymond McIntyre, St. Louis, Executive Secretary, presented a few problems facing organized medicine with the beginning of another fall.

A social hour preceded a dinner at 8:00 p. m.

W. A. BLOOM, M.D., Councilor.

BOOK REVIEW

SELF TEACHING TESTS IN ARITHMETIC FOR NURSES. By Ruth W. Jessee, R.N., M.A. Instructor in Science, Bridgeport Hospital, Bridgeport, Connecticut. St. Louis: C. V. Mosby Company. 1943. Price \$1.50.

This book would be of value in any school of nursing. Insofar as any book could be, it is self teaching. A student's time, however, is valuable and class instruction would help her to understand the underlying principles with fewer hours of study. The drill on fractions, decimals and ratios is thorough. Problems are well chosen and are similar to those which the student will need in giving medications and preparing solutions. Problems in dosage for infants and children are valuable. Probably one of the best features of the book is the practice and achievements. They are practical and for each group of tests the normal time for completion is given.

G. S.

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CERTAIN CONSIDERATIONS IN THE MANAGEMENT OF SMALL INTESTINAL OBSTRUCTION

CLAUDE J. HUNT, M.D.

KANSAS CITY, MO.

Obstructive lesions of the small intestines are still accompanied by a high mortality, a mortality largely the result of delayed diagnosis and an improper estimation of the type of obstruction present. An adequate knowledge of the signs and indications of obstruction is essential, as well as a knowledge of the types of obstruction that may occur. One must ever be conscious of the possibility of intestinal obstruction in all abdominal distress or abdominal colic that does not associate itself readily in a clearly defined manner with some localized pathologic process. Abdominal colic, obstructive in origin, is unlike any other form of abdominal colic. In all acute abdominal conditions, except acute intestinal obstructions, there are physical signs that indicate the probable nature and location of the acute infection. Unfortunately, in acute intestinal obstruction there are no early physical findings. Rigidity and tenderness are not present. Early physical signs are conspicuously absent except in external strangulated obstruction. In this the abnormality is noticed by the patient and medical counsel is sought early.

The hidden obstructions, those within the abdomen, frequently are not diagnosed until after much delay. They must be kept in mind in all obscure acute abdominal conditions associated with intermittent, crampy, colicky pain, with or without nausea and vomiting, in which there are no physical signs of an acute abdominal disorder. The passage of gas or movement of the bowels does not eliminate the possibility of obstruction. It must be remembered that the bowel distal to the obstruction is unimpaired and may function normally and completely empty itself of gas and feces. Good results obtained by enema likewise may occur. Morphine is to be withheld as it may lull the patient and the physician into a feeling of security, only to find later

an obstruction with complications. Obstruction is characterized definitely by paroxysmal spasms of intestinal pain associated with a noisy abdomen, that is, borborygmus. If localized abdominal tenderness is associated with this phenomenon, it indicates parietal peritoneal irritation from a loop obstruction. A consciousness must, therefore, be ever present as to the presence of these symptoms and full evaluation must be made of them. It is only through early recognition and early operation that complications can be avoided and the mortality reduced.

The types of obstruction have a definite relationship to future complications, to the nature of operation, to the necessity for immediate surgery and to the probability of relief by medical measures. The usual types of small intestinal obstruction are simple, angulated, strangulated or loop, inflammatory, intussusception and those that are intrinsic.

A simple obstruction is one in which a band of adhesion constricts a bowel and results in a progressive distention of the proximal bowel. Gangrene is not imminent and the bowel retains its vascularity unimpaired. The level of the obstruction determines the degree and rapidity of fluid and electrolyte loss. The higher the obstruction, the more rapid the systemic effects. Early complete obstruction requires immediate operation for its release and this is usually simple and attended by a speedy recovery. Advanced obstruction, in which the intestines are extensively dilated in a transverse position and in which there has been much fluid loss through vomiting, requires rehabilitation by fluids, saline solutions and intestinal intubation prior to operation. This type of dilatation is an indication for the use of the Miller-Abbott tube. Incomplete obstruction may be relieved by fluids and the Miller-Abbott tube.

Angulated obstruction from an adherent constriction presents much the same intestinal and systemic phenomenon as the simple constricting band and requires the same program of treatment.

External strangulated obstruction, as occurs in the various types of surface hernias, requires no skill in diagnosing. The condition presents itself

as a serious emergency requiring immediate reduction or surgical operation. The viability of the bowel is always in question and, even though reduction is accomplished without surgery, there is no assurance the bowel is viable, and, furthermore, nothing of a positive nature has been done to prevent a recurrence. Also, reduction might seem to be complete when in reality it may be only a reduction en masse, which in no way frees the obstructing ring. Again, repeated attempts at reduction produces edema and trauma to the bowel and further damages the viability of the bowel wall. Therefore, we attempt little or no reduction by manipulation but advise only surgical reduction and repair. We feel sure this is the most positive way to attain assurance of bowel integrity and to safeguard against a recurrence. A loop obstruction, external or internal, therefore is quite different and presents a different intestinal pattern than simple obstruction and imposes a more urgent need for immediate surgery. The blood supply to the involved bowel is impaired or completely occluded, therefore operative relief must be obtained before devitalization of the bowel occurs. Even in the presence of proximal bowel distention of an advanced degree, immediate operation is indicated.

Partial or complete obstructions may result from an adherent segment of the small bowel to an inflammatory mass, resulting in edema, angulation and constriction of the bowel with corresponding proximal dilatation of the intestines. Obstruction occurring following surgery for an acute inflammatory process must be at least considered as an inflammatory obstruction and appropriate conservative treatment instituted. Many of these obstructions will correct themselves after the protracted use of the Miller-Abbott tube and adequate rehabilitation by fluids and saline. As the inflammatory process subsides the obstruction will be released. We have observed this fortunate termination in many instances.

Intussusception of the small bowel into the right colon occurs most usually in small children and infants and requires early diagnosis. The suggestive symptoms are those of small bowel obstruction plus the passage of blood and mucus in the stools. Attempts should be made to reduce the intussusception by enemas. These are sometimes successful in the early stages of the disorder before edema and swelling have fixed the bowel at the point of the cecum and narrowed it to a point at which reduction cannot be accomplished. Plain enemas of any description are not to be advised as one has no conception of the completeness of the reduction. Attempted reduction by enema should be done under fluoroscopic observation with a thin opaque media. Only by this method can one observe under direct vision the success of reduction and the assurance that complete reduction has occurred. Forceful attempts at reduction by enemas should not be employed and in no form should they be prolonged if success is not readily attained. The condition is

primarily and usually one requiring surgery. Surgical attempts should be gentle and reduction accomplished by milking or massaging the intussuscepted bowel from the distal toward the proximal end. No attempt should be made to extract the bowel by traction. A gangrenous bowel, or ineffective reduction is usually fatal as resection is not tolerated in infants or young children, hence conservative measures should not be long employed.

Intrinsic obstruction by new growths, or a gall stone, may be partial or complete and produce symptoms of a simple obstruction with associated proximal bowel distention and loss of fluid and electrolytes in proportion to the level of the obstruction. New growths require resection and stone obstruction may be removed by local excision and closure or by resection. Usually, edema, hypertrophy of the bowel and induration at the site of stone obstruction makes resection and anastomosis preferable.

Wangensteen states that obstruction to the continuity of the bowel occasions essentially two disturbances: (1) distention and its effect, and (2) loss of fluid because of vomiting and interference with absorption.

Distention presents mechanical difficulties at operation, danger in surgical manipulation and biochemical changes of great magnitude. It is probably caused by digestive fluids, intestinal secretion and swallowed air. Lower segments of the bowel present greater danger because they are not evacuated by vomiting. Colonic obstruction produces a closed loop type of obstruction and the viability of the bowel may become endangered or impaired, especially in the most distensible portion—the cecum. The ileocecal valve usually does not permit colonic fluid to escape into the ileum, therefore the colon becomes more and more distended, consequently, endangering the bowel nutrition. There is only pain and progressive distention with no chance for relief through vomiting. High grade distention always endangers the viability of the bowel wall either through intra-enteric pressure or extrinsic constricting factors. Also, the impaired bowel wall encourages transmural diffusion of infection and absorption. The fluid loss is increased greatly in obstruction in the upper small intestine and is indicated by the chemical changes in the blood, so well demonstrated by the epoch-making work of Haden and Orr. Saline solution adequately replaces the lost fluid and restores the electrolyte deficiency.

In review, it can be stated that intestinal obstruction can be recognized by its peculiar type of abdominal colic which is quite unlike any other form of abdominal colic. Its chief characteristics are painful intestinal contractions associated with a noisy abdomen or borborygmus and showing on a radiographic film an altered intestinal pattern of gaseous distention. It likewise shows where the obstruction is and much information can be obtained as to the degree and nature of the obstruction. The

procedure of treatment is restoration of body fluids and electrolytes, gastric or intestinal intubation, transfusions and operation.

Fluids and saline are the greatest value in high obstruction and of little merit in colonic obstruction.

Transfusion is of greatest value in strangulated obstruction in which the blood loss has been great.

Intestinal intubation is indicated in simple, angulated or inflammatory obstruction with extensive proximal distention.

In many instances of inflammatory obstruction operation may not be necessary after the distended bowel has been evacuated and the inflammatory process has subsided. It is not a procedure to employ prior to surgery in strangulated or loop obstruction. It is essential in the postoperative treatment of all obstructions to prevent further distention and to assist in reestablishing the normal caliber of the bowel.

Surgery is the essential relieving agent in complete obstruction. The earlier it is employed the lower the mortality. In simple obstruction the release of a band is usually adequate. In strangulated and loop obstructions segmental resection depends upon the viability of the bowel.

1016 Professional Building.

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CONGENITAL DIAPHRAGMATIC HERNIA

REPORT OF A CASE

J. A. OSSMAN, M.D.

JEFFERSON CITY, MO.

In spite of the increased frequency with which diaphragmatic hernia is being diagnosed its occurrence is still so infrequent that its manifestations and symptoms cause much difficulty in diagnosis. It is quite apparent that it is more common than present records indicate and that its existence frequently is unsuspected.

Congenital hernia of the diaphragm is due to failure of its normal development and fusion and consequently it is without a sac. Congenital hernias occur eight times more frequently on the left side than on the right and the most common sites in order are (1) through the pleuroperitoneal hiatus, (2) through the dome of the diaphragm, (3) through the esophageal opening, (4) through the foramen of Morgagni, (5) through the gap left by the absence of the left half of the diaphragm.¹

In congenital diaphragmatic hernia, present at birth, if the defect is large enough to cause symptoms the infant usually dies. In one series of fifty-seven collected cases, fifty-one patients died in the first twenty-four hours of life.² Is it not reasonable to assume that of all infants expiring in the first

few days of life, undiagnosed hernia of the diaphragm may be a more frequent etiologic factor than is commonly supposed?

The clinical syndrome of these large hernias present at birth is simply one of intense respiratory and circulatory disturbance and these symptoms are common to the other conditions responsible for infant mortality in the first twenty-four hours of life such as cerebral trauma, asphyxia, atelectasis or congenital cardiac defects.

The following case is reported in an attempt to substantiate this conclusion.

REPORT OF CASE

Following a normal pregnancy Mrs. L. C., primipara, aged 27, was admitted to St. Mary's Hospital on February 22, 1943. She was in active labor. At 6:15 p. m. pains were severe, position was L. O. A., from 4 to 5 cm. dilation. Second, grains 3, was given per os followed in one hour by dilaudid grains 1/32 hypodermically. Contractions continued and the head was on the perineum at 9:30 p. m. An episiotomy was performed and the patient was delivered of a male child by low forceps at 9:50 p. m. The umbilical cord was about the neck twice in a rather firm manner.

The child cried at once and externally appeared to be normal in every respect. The cord was tied and the child taken to the nursery. In about forty-five minutes respiratory difficulty was apparent. Excursions were rapid and shallow and there was cyanosis of the extremities. A tracheal catheter was passed. No mucus was obtained but the respirations seemed to be slightly deeper following this procedure. The baby remained slightly cyanosed and cried feebly all night. Oxygen was given continuously but had no effect.

Physical examination of the chest showed absence of breath sounds over the entire left side. Breath sounds were present over the right chest posteriorly. Heart sounds were normal and heard best just over the sternum. The child was seen in consultation by Dr. Irl B. Krause and it was agreed that pulmonary atelectasis was the most likely clinical diagnosis.

Roentgen ray of the chest was made to establish the diagnosis.

Dr. David LeMone reported the following anterior-posterior view of chest, supine: The trachea is displaced to the right. The heart is visualized in the right thorax, its lateral border adjacent to the right chest



Fig. 1. Roentgen ray showing displacement of thoracic structures and small area of emphysematous lung in right costophrenic angle.

wall. An area of emphysematous lung is noted in the right costophrenic angle. The right diaphragm is intact. The left diaphragm and spleen cannot be identified. Several loops of intestine and the stomach are visualized in the left thorax. The intestinal patterns are not visualized in the abdomen.

Roentgen diagnosis: Diaphragmatic defect, left, with herniation of stomach and intestines into the thorax; associated cardiac displacement; localized emphysema and atelectasis.

The infant's condition became worse rapidly. Cyanosis became severe, respiration gasping, and death ensued February 23, 1943, at 3:15 a. m. At no time after the respiratory difficulty became apparent would surgery have been possible.

Permission for a limited postmortem only was obtained. Autopsy findings are given in brief only as the photographs are self explanatory.

The abdominal and thoracic cavities were opened in the usual manner. (See Fig. 2.) The most striking thing on opening the abdomen was that it was occupied entirely by the liver which was much larger in size than normal for a newborn infant. The organ seemed to have undergone a ventral rotation with the domed diaphragmatic surface presenting. The kidneys and pancreas were in the usual normal positions. Exclusive of these organs, the entire intestinal tract and the spleen (with the exception of the descending colon and sigmoid) were in the thorax. The spleen can be seen in figure 2 at the apex of the left thorax.

Figure 3 shows the liver rotated back to its usual position; the stomach, small and large intestine and spleen have been returned through the hernial opening into the abdomen. The massive defect in the posterior portion of the diaphragm can be seen.

CONCLUSION

A case of massive congenital hernia of the diaphragm is reported. It is suggested that the clinical



Fig. 2. Showing appearance of abdominal and thoracic cavities at beginning of autopsy.



Fig. 3. Showing diaphragmatic defect with abdominal viscera returned to abdomen.

syndrome caused by these large hernias may be confused with the symptoms of the other conditions responsible for infant mortality in the first forty-eight hours of life. The existence of these large congenital hernias of the diaphragm may be more common than is supposed.

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SYNTHETIC VITAMIN PREPARATION OF NO VALUE FOR GRAY HAIR

Twenty milligrams of calcium pantothenate, a synthetic vitamin preparation, was administered daily for six months to 27 white men and women with gray hair with no significant change in the color of the hair, Irvin Kerlan, M.D., and Robert P. Herwick, M.D., Ph.D., Washington, report in *The Journal of the American Medical Association* for October 16.

"Color measurements of representative samples of hair obtained from each of the subjects at the outset, during and at the conclusion of the study revealed no significant color change," the two physicians declare.

"From these findings, from the clinical evidence available in the literature and from personal communications, it is concluded that calcium pantothenate is of no value in the restoration of color to gray hair."

WHAT CONSTITUTES AN ADEQUATE EXAMINATION?

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In industry there are two types of physical examination: The pre-employment examination and the periodic examination. Industry, each year, has become more interested in pre-employment physical examinations both from a public health standpoint and a personal standpoint of cold dollars and cents. Employees with sound bodies are better equipped to turn out a day's work than those with physical handicaps. Of course, there are exceptions to this rule. There are also minor defects that are found in the pre-employment examination which, if corrected, may later save the individual suffering and lost time. These individuals are recommended for employment after being told of these defects and arrangements are made with the personnel department to have them corrected immediately or in the near future. Follow-ups are carried on in a manner of cooperation rather than in a compulsory manner and in most instances are successful. As to protection of the company, many conditions are found that could become compensable disabilities or industrial handicaps.

The type of examination differs in detail as to the type of work the individual is expected to do. For an individual who is to be employed for routine office work, a general physical examination to determine that they are in good health and such things as that they have normal vision is sufficient, while an individual who is being examined to do ordinary laboring work must have the skeletal and muscular development, a good cardiovascular system and be free of those defects that will handicap him from manual labor, most noticeable, hernia, spine defects, joint involvements.

In individuals who are to be exposed to health hazards, roentgen rays of the lungs are made.

Many occupations such as food handlers, barbers and beauty operators are required by the laws of the state to have a blood test. For these, the State Board of Health provides mailing containers and an efficient system for this examination and reporting of the findings.

All pre-employment examinations should include this blood examination to cooperate with the program of the United States Public Health Service to help stamp out syphilis. A positive test does not preclude an individual from employment providing he does not show signs of degeneration and he must begin treatment immediately. He is obliged to bring a letter from his doctor stating the type of treatment that is being given. The latter is done to insure the individual of getting the recognized treatment and keeping him out of the hands of quacks and charlatans. Each six months he is called in for a check-up blood test; it is surprising the cooperation one gets and the good that is accomplished.

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Most employers, particularly in the larger companies, have their own type of examination blanks and lay stress on certain parts of the examination that they deem essential to their particular type of employment.

In general, the examination should contain the individual's full name, no initials, his color, sex, marital status, date of birth and number of children, a short history of past major illnesses, operations and injuries. Men should be stripped and women should be undressed and furnished with an examining gown and their height, weight, blood pressure, pulse, respiration and temperature taken, also measurement of the chest at both expiration and inspiration and the girth of the abdomen.

Then the general structure is observed for gross abnormalities; the individual is asked to extend his upper extremities, open and close his hands, bend his wrists, flex his elbows, raise his arms above his head, bend over and attempt to touch the floor, assume a squatting position and arise to stand on the ball of his feet. In this way, any defect of his joints can be noted quickly. The back is inspected and palpated and at this time an examination for hemorrhoids is made.

The head and scalp are noted for defects, then the ears for perforation of drums and discharges. The hearing is tested by standing in back of the individual, placing a finger in one ear and whispering, having the applicant repeat. The results may be recorded as normal, slightly diminished, markedly diminished or absent.

The nose is examined for deflected septum, chronic discharge and obstruction. Few noses pass as perfect, yet most are serviceable.

Eyes—Test vision with Snellen test card and, if required, the Jaeger test. Also pupils are tested for reaction to light and distance and defects such as conjunctival scars, discharge as in trachoma and growths are noted. Also color vision is tested.

Mouth—Condition of the tongue, palate and pharynx, teeth and gums should be noted. Note number of teeth missing. Most individuals seeking employment have poorly kept teeth and gums.

Neck—Check for deformities such as enlarged lymph glands and enlarged thyroid.

Chest—Examine for asymmetry, prominences, depressions, error of bony or muscular development, rickets.

Breast—Careful palpation of the mammary glands should be done to detect the presence of any hardness, lump or suspected tumor formation.

Lungs—In addition to the systematic observation of the chest, back and front, during quiet breathing, and in full inspiration and expiration, by inspection, palpation, percussion and auscultation, the subject should be required to breathe out fully, cough lightly and immediately breathe in. The stethoscope should be applied to different areas of the chest in turn during this operation, especially above the third rib in front and the spine of the scapula behind. In this way the more minute, moist sounds indicating a possible early or incompletely arrested

tuberculosis are most likely to be detected. When such are found, more elaborate examination is indicated.

Heart—All observations made with the patient at rest should be repeated immediately after brief exercise of a kind and amount to cause at least momentary increase in respiration, such as hopping fifteen times on each foot. The size of the heart and the correlation between the apex impulse and the radial pulse should be observed. The source, location in the cardiac cycle and significance of abnormal sounds, murmurs and thrills always should be determined. Inspection, palpation, percussion and auscultation should be used methodically before, and palpation and auscultation after, exercise. The effect of exertion on the rate and extent of respiratory movement and on the color of the skin and lips, and the subjective symptoms of the applicant, especially pain and dyspnea, should be noted carefully in order to estimate the work capacity or reserve of the heart muscle. Those whose pulse is ten or more beats above the resting average at the end of two minutes after exercise, or who show undue physical distress, should have further study and suitable advice.

Abdomen—Inspect and palpate for inguinal hernia. Have the applicant rise on the ball of his feet with arms above his head and cough or strain; observe for bulging, then examine digitally for presence of complete or incomplete hernia. Enlarged rings without any bulging into the canal are not grounds for rejection. Observe operative scars for hernia.

Genitals—Examine for present lesions, past scars on glans, discharge, hydrocele or varicocele.

Examine lower extremities for size, shape, deformities, varicosities. Check the reflexes.

Urine Analysis—The presence of a trace of sugar or albumin is an indication for a more thorough examination.

Röntgen rays of the chest and other laboratory work is done by some employers as a routine.

This, in general, is the pre-employment examination. Periodic examinations are not made by some employers while others do them at two, four, six or twelve month intervals.

Now that there is a man power shortage, many older men are being taken into industry and create many problems. These, like many other problems, have to be solved as to the individual case rather than try to lay down some general rule. The examiner must know the type of employment the applicant will be expected to do, how many hours he will have to work and then, after physical examination, determine if the applicant is physically qualified for that particular employment.

4101 Laclede Ave.

"We take pride in our millions of bathtubs, yet there is much that can be done to render them safe," Guy Hinsdale, M.D., Charlottesville, Va., declares in *Hygeia, The Health Magazine* for October. "Architects and designers of tubs and fixtures must recognize the dangers and provide foolproof safeguards."

INDUSTRIAL HAZARDS

WILLIAM M. MACON, M.D.

ST. LOUIS

The subject of industrial hazards is too vast a subject to cover thoroughly in the short time allotted here; however, an attempt can be made to hit some of the high spots.

The problem of occupational accidents is a large one. Some figures on the national accident fatality toll are of interest at this time.

Table 1. *The National Accident Fatality Toll*

	1942	1941	Per Cent Change
All Accidents	93,000	101,513	- 8
Motor Vehicle	27,800	39,969	-30
Public (Not motor vehicle)	15,500	15,000	+ 3
Home	30,500	30,500	0
Occupational	18,500	18,000	+ 3

The all accident totals include accidental deaths of military personnel, not shown separately. Motor vehicle deaths include some which also are shown under other titles such as occupational and home. The 1941 all accident and motor vehicle totals are U. S. Census Bureau figures. All other are National Safety Council estimates.

By this table, one sees that occupational accidents killed approximately 18,500 workers in 1942, an increase of 500, or 3 per cent over the 1941 total. Nonfatal injuries totaled about 1,750,000 or 9 per cent more than in 1941. Permanent disabilities included in the nonfatal total numbered about 70,000.

Wage loss, medical expenses and overhead costs of insurance amounted to about \$900,000,000. The 3 per cent increase in deaths compared to the employment increase of about 5 per cent indicates a slight improvement in the fatality rate.

Figure 1 will show the distribution of all reported injuries resulting in permanent partial disability in manufacturing according to the part of the body affected in 1941. This is taken from a report made by the United States Department of Labor Bureau of Labor Statistics. The statistics for 1942 will not be released until July or August of this year, but they are presumed to be about the same since they were exactly the same for 1940 as they were for 1941. According to this chart, eyes received 5 per cent of injuries, arm and forearm 3 per cent, hand and fingers 77 per cent, thigh and leg 3 per cent, foot and toes 7 per cent and other parts of the body 5 per cent.

In injuries, the well known adage "an ounce of prevention is worth a pound of cure" applies most admirably. Of late, safety in many forms throughout industry has done much to reduce the accident rate. Ways and means of accident prevention are too numerous to discuss or even mention in this short discussion. Prevention in many industrial plants is often left entirely up to the safety engineer or safety council. This, I feel, is a mistake. The medical department should work closely with the safety department. The medical men at each plant should familiarize themselves with the hazards

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in their plant and work closely with safety engineers in attempting to control accidents. This is more true today than ever before, during the national war effort. Education of the employee seems to be the best way in which to prevent accidents, that is, through posters and safety meetings, that show the employee the accident rate and the type of hazard in his particular job. Various skull savers, eye protectors, safety belts and harnesses are of no value unless the worker uses them. Rules and regulations are of less value than voluntary use of the protectors.

A quick but simple check list such as shown in table 2 is of great value in any plant.

Table 2. Check List

1. Are all operations classified according to hazards and the protective equipment needed?
2. Is a systematic campaign conducted to keep workers sold on benefits of protection?
3. Are respiratory devices cleaned and sterilized daily?
4. Are goggles fitted correctly and kept in proper adjustment?
5. Are safety shoes fitted by an experienced attendant?
6. Is the wearing of loose and otherwise unsafe clothing discouraged?
7. Are complaints from workers investigated promptly?
8. Are the machines kept up-to-date with modern protective devices on them?

Treatment of industrial injuries may be conveniently divided into two parts; namely, first aid treatment and medical treatment.

Various first aid facilities found in industrial plants range from a meager kit to a well equipped hospital. The equipment available and the skill and knowledge of the attendant are equally important in the treatment of injuries and the reduction of lost time.

The most important point probably of any first aid attendant is his ability to recognize his own limitations and refrain from attempting to treat cases that require professional care.

Personnel in charge of the dispensary are listed in order of desirability as follows: (1) a physician and nurse, (2) a registered nurse, (3) an attendant trained in the army or navy hospital corps, (4) a graduate of the American Red Cross or Bureau of Mines first aid course who has had hospital experience or worked with an industrial physician.

The space required for the dispensary varies with the number of employees and extent of treatment to be provided. The hospital or dispensary should be readily accessible from all parts of the plant. Sunlight, fresh air and privacy are desirable. The equipment may vary to please desires of the personnel.

The National Safety Council recommends: one room for 50 to 500 employees; two rooms for 500 to 1000 employees; three rooms for 1000 to 5000 employees; five rooms for 5000 to 10,000 employees.

Isolated groups of workers such as train and boat crews, linemen and lumber jacks should never be neglected. They should be supplied with the essential first aid requirements as well as trained in their use.

In snake-infested country, it is advisable for men

to be equipped with snake-bite kits which may now be purchased commercially.

Frequently, persons who are seriously injured must be transported from the scene of the accident to a dispensary or hospital. The trained first aid attendant knows that extreme care must be used in such cases to avoid complicating an injury or endangering life. Many a life has been endangered and many an injury aggravated by bundling injured persons into cars to rush them to a hospital.

Accurate dispensary records are essential and must be kept complete on each service rendered. Care should be used to see that each entry gives adequate information. Table 3 shows the information necessary on each case.

Table 3. Information for Dispensary Record

1. Name of injured.
2. Address of injured.
3. Date and time injury was received.
4. Date and time injury was reported for treatment.
5. When and how injury was received.
6. Names of witnesses, addresses and telephone numbers.
7. Nature of injury.
8. Kind of treatment given and by whom.
9. Whether employee returned to work immediately after treatment; if not, when.
10. Evidence of previous physical impairment.

The old idea of the "Company Doctor" as an old fogey who is too run down and out of the practice of medicine to do any type of good medical work is fast disappearing. The more modern idea of an industrial physician is that of an up-to-date well trained medical man.

Thus, one sees and knows that medical service has grown with industry. Originally planned to provide treatment for those injured while at work, the industrial medical department has expanded its functions to include health supervision over the working personnel and the plant environment.

An adequate industrial medical service requires a definitely organized plan thoroughly understood

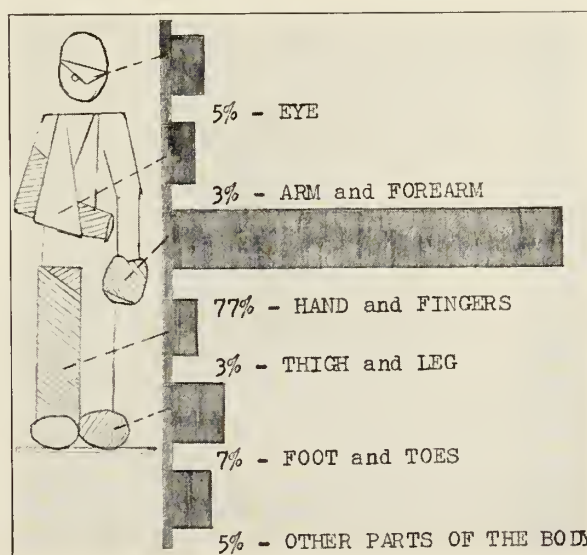


Fig. 1.

and supported by management. Such a service includes the following essentials:

Table 4. *Essentials of Industrial Medical Service*

1. A staff of qualified physicians, nurses, and attendants in proportion to the size of the plant.
2. Adequate emergency dispensary and hospital facilities.
3. Efficient care of occupational diseases and injuries.
4. Reasonable first aid and advice for nonoccupational injuries and illnesses while on the job.
5. Physical examinations—pre-employment and periodic.
6. Education of employees in safety and personal hygiene.
7. Adequate records on file in the medical department.
8. Supervision of plant sanitation and health measures.
9. Cooperative relationship with the family physician.

Complicated surgical cases and the more serious cases should be sent to approved hospitals, where they are available, rather than elaborate facilities be set up for their handling.

Management and the medical director jointly can formulate policies which will be both adequate and practicable. Supervision of health and medical service should be the responsibility of a physician.

Oftentimes, plant medical officers engage in private practice with a company's complete approval. Whether or not a full time physician is warranted depends on several factors such as size of plant, nature of its operations or administrative requirements. During the present shortage of physicians, a part time arrangement may be the only possible solution. This would, of course, be preferable in the smaller plants. Under this arrangement, the physician might assume only supervisory responsibility delegating much of the detail work to qualified assistants.

A physician who is present only part of the day should have definite hours of attendance with a full time nurse in attendance so that treatment will not be neglected and complete records will be kept.

Some plants arrange for physicians on a call basis or send the patient to his office in emergencies. Under such conditions, the physician is not likely to develop a real interest in an organization nor will he be in a position to do any effective educational work.

Where several small plants are located close together, a health service has been carried on successfully by maintaining cooperatively a dispensary with the necessary equipment and personnel. In this way, adequate facilities are made available at a moderate cost.

The medical director should have the professional ability of a physician in private practice, as well as certain specialized qualifications. A general knowledge of industrial relations is important, and he should keep uppermost in his mind that his first duty is to the workers under his control.

The question of outside consultants is very important. Often, the executive and diagnostic ability of the director is of greater value than his skill in surgery. The plant physician should realize his limitations and refer all cases beyond his ability to a specialist, surgeon, oculist, dentist or whatever is necessary. This is especially true in eye

injuries in which there should be no hesitancy in summoning specialists in potentially serious cases.

Proper nursing personnel is most essential in all plant hospitals. Like the plant physician, the nurse should be democratic without being too familiar. She should have a liberal education and usual hospital training. In addition to this, she should be able to advise on well balanced meals, suitable meals for lunch rooms, significant points regarding sanitation, housekeeping and proper clothing. She should also know some public health nursing, diseases incidental to the industry and legal provisions and restrictions.

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CONTINUOUS CAUDAL ANESTHESIA IN OBSTETRICS

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Any advancement in the field of anesthesiology, and particularly obstetrical analgesia, should receive prompt and due recognition by the profession for the laity will be informed of such painless labor procedure by the press and lay journals. It is for this reason I believe that the subject of continuous caudal anesthesia would be of general interest to the profession so that the physician may know what confronts him when his patients inquire about the new painless method for having their babies.

In considering the subject of obstetrical anesthesia, one must always remember that two distinct individuals are being cared for, namely, the mother and the infant in utero; and any agent or method which would be satisfactory for one will probably be deleterious to another.

With these factors in mind, I will confine my remarks to the anesthesia aspect only, for I still believe that the mechanism of labor and management are the provinces of the obstetrician, and the duties of the anesthesiologist are to relieve the patient of her discomfort without harming the mother and her unborn child, and at the same time provide ideal working conditions for the obstetrician.

At the present time continuous caudal anesthesia in the hands of the specialist in anesthesia seems to fill the needs of the ideal obstetrical analgesia for it provides for the mother a relatively comfortable labor and a painless delivery. The fetal mechanism of the newborn child is not impaired and the obstetrician works under conditions of marked relaxation and freedom from pushing and straining during delivery and postpartum repair.

Caudal anesthesia for obstetrics is not a new innovation as the single injection technic has been used with a fair amount of success by a great num-

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ber of obstetricians and anesthesiologists. The greatest disadvantage with this method has been the lack of obtaining sufficient anesthesia for the entire delivery.

Hingson and Edwards have modified the technic of caudal anesthesia so that analgesia could be started in the early stages of labor to relieve the pain and discomfort for the mother in this period, with the added advantage of continuing the analgesia until the completion of labor and postpartum repair.

Continuous caudal analgesia produces anesthesia by continuously bathing the nerve trunks of the sacral and lumbar plexuses within the peridural spaces, and at no time entering the subdural space, so that the patient is able to move the lower extremities throughout labor and uterine contractions continue without impediment.

To understand clearly the process of continuous caudal anesthesia, it is important that the anesthesiologist and the obstetrician should have some conception at the anatomy of the sacral canal and the nerve supply of the uterus, cervix, vagina and perineum.

The sacral canal is a prismatic space continuous with the spinal canal. Its approximate length is from 6 to 8 centimeters. The sacrum is formed by the fusion of the sacral vertebral bodies to form its anterior and posterior walls. The dural sac terminating at the level of the second sacral vertebra marks the upper boundary of the sacral canal. The lower end of the canal tapers down to the sacral hiatus, an opening on the posterior surface of the sacrum. The hiatus is usually triangular in shape, the apex being the fourth sacral spinous process, while the base is marked laterally by the sacral cornua.

The sacral hiatus is covered by a fibrous membrane, the sacrococcygeal membrane, and by the lateral sacrococcygeal ligaments. Within the sacral canal is found loose areolar tissue in which are embedded the filum terminale, the sacral and coccygeal nerves and a rich plexus of veins.

The motor nerve fibers of the uterus and upper uterine segment arise from the upper thoracic sympathetic ganglion and travel in the fibers of the celiac, aortic, renal and hypogastric plexuses along the blood vessels to the uterus. If the area of skin anesthesia is kept below the level of the sixth thoracic segment, or specifically below the umbilicus, the forces of labor are not diminished; if it extends higher, the progress of labor with regard to frequency and force of the uterine contraction is delayed.

The sensory supply to the cervix and upper part of the vagina travels by way of the sacral parasympathetic nerve, while the sensory and motor supply of the lower vagina, perineum and pelvic floor travel in the perineal and pudendal somatic nerve. Prolonged blocking of these nerves through continuous caudal anesthesia is thought to produce a definite softening of the cervix with a more rapid

effacement of the lower uterine segment and cervical dilatation as determined by rectal examination. It has been found experimentally that, if no more than 30 cc. of solution is injected in the sacral canal, the level of anesthesia would not extend any higher than the tenth thoracic segment and infrequently to the sixth.

Clinical studies have furthermore verified the fact that (1) blocking of the sacral nerve abolishes the pain of distention of the birth canal, paralyzes the skeletal muscles of the perineum and abolishes the tone in the smooth muscles of the cervix, and (2) extending the block to include to the tenth thoracic nerve segment, abolishes the pain of uterine contraction without impairing nerve force.

THE MANAGEMENT OF LABOR

Continuous caudal anesthesia is started when the patient is in actual labor and in actual distress. The contractions must be regular, of at least thirty seconds duration and five or less minutes apart. Cervical dilatation must be at least 3 or 4 centimeters. If there is much distress, anesthesia may be started sooner. An enema is recommended before the start of anesthesia if the progress of labor is not too rapid. Before the administration of the anesthetic it is imperative that the obstetrician have a complete evaluation of the case. He should know that there is no placenta previa nor disproportion of the child and pelvis. The anesthesiologist should know whether or not there is any deformity of the sacral canal or infection around the site of injection.

The anesthetic is started with the patient in a modified lateral Sims' position. The sacral and coccygeal areas are prepared with green soap and an antiseptic; sterile precautions must be followed throughout. The tip of the coccyx is palpated and the sacral hiatus is determined and indicated as lying between the sacral cornua. This area is approximately 2 centimeters from the tip of the coccyx. This point is then marked and a few cc. of the analgesic agent (which is 1.5 per cent mety-caine) is infiltrated. Then a special malleable stainless steel No. 19 gauge needle is inserted in the midline in the direction of the hiatus and inserted into the sacral canal for from one to two inches. Before injection of the solution, aspiration of spinal fluid should be attempted and, if obtained, the method is discarded as unsatisfactory. Aspiration of blood necessitates careful manipulation of the needle in the canal without withdrawal and a careful administration of the anesthetic agent. Progressive analgesia in the areas supplied by the coccygeal, hemorhoidal, perineal, pudendal, ileoinguinal and ileo-hypogastric nerves is completed in twenty minutes. There may be uncomfortable sensations in one or both legs as the solution circumscribes the sciatic nerve. There will be complete relief of abdominal uterine cramps within fifteen minutes. Marked vasodilatation, cessation of sweating and increase in temperature of the skin of the feet will ensue

within fifteen minutes after the injection. Anesthesia is then maintained by the injection of from 10 to 20 cc. of the metycaine solution every thirty minutes or more. These additional injections will be sufficient to keep the patient quite comfortable throughout the duration of labor.

Indications that one is outside the canal are (1) failure to obtain pain relief within thirty minutes; (2) the appearance and palpation of an injection tumor superficial to the dorsum of the sacrum.

ADVANTAGES OF CONTINUOUS CAUDAL ANESTHESIA

1. It is a useful form of block when a general anesthesia is contraindicated.
2. Narcotics and sedatives are not necessary.
3. The procedure is simple in the hands of the experienced anesthesiologist.
4. The patients in labor are calm, quiet, relaxed and rational.
5. The uterus does not relax and it maintains its normal motility and mechanism.

DISADVANTAGES

1. The greatest disadvantage is subarachnoid injection of the drug.
2. The complete loss of the subjective symptom of pain.
3. Requires a skilled anesthesiologist.

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CONTINUOUS SPINAL ANESTHESIA

JOE McNEARNEY, M.D.

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Spinal anesthesia as a safe procedure in surgery dates back to the advent of novocain in the year 1906. Before this period there was quite a high mortality rate under spinal anesthesia and spinal anesthesia was of questionable value in surgery as it is today.

At the present time I believe that spinal anesthesia is the safest type of anesthesia for abdominal surgery, especially in cases that are poor surgical risks, and in operations that are of long duration and in which much surgical trauma will be done. Now that there is continuous spinal anesthesia, time need no longer be a factor because, with small repeated doses of novocain, one can maintain good anesthesia without the ill effects seen with one large dose of novocain.

If the case be a good surgical risk and the time of the operation is to be two hours or less, almost any abdominal operation can be done under the old one large dose method without resorting to continuous spinal. However, all surgical cases are not ideal cases for any anesthesia; this holds true in heart cases, in the aged, in the anemic patient that has not had time for proper preparation and in surgery that is to be a time-consuming ordeal for

both the patient and the surgeon. It is in these cases in which it is not possible to give one large dose of novocain without endangering the life of the patient that continuous spinal anesthesia becomes the anesthesia of choice, for, with repeated small doses of novocain, the risk is no greater than with local anesthesia and it is certain to give more relaxation and to cause the patient no pain or distress as so frequently is seen under local.

It is known that surgical shock from trauma at the field of operation is less under spinal anesthesia and that there is no need to hurry and do an incomplete operation under continuous spinal anesthesia as time of anesthesia is not a factor under continuous spinal.

TECHNIC OF CONTINUOUS SPINAL ANESTHESIA

The equipment for administering a continuous spinal anesthetic is the factor in the success of this method.

As the needle will be left in place at the site of the spinal puncture, a special pad for the operating table must be provided with a break in the pad which will allow the needle to remain in place without coming in contact with the table. The needle must be a malable needle which will not break off if it should be bent while it is in the spine.

A piece of thick-walled rubber tubing of very small caliber, about thirty inches long is needed to make the connection from the spinal puncture needle to the syringe containing the novocain for the spinal anesthesia.

A Luer-Lok 10 cc. syringe is used to inject the spinal anesthesia by fractional dose. A stop cock connection is required for the Luer-Lok syringe.

ADMINISTRATION OF THE ANESTHETIC

In continuous spinal anesthesia novocain has been the anesthetic agent and it has been injected in fractional doses as needed during the operation.

The patient is placed on the operating table with the special pad in position. The spinal puncture is made at the desired interspace with the special flexible 18 gauge needle. This needle will permit much bending but will not break. The site of the puncture is at the second or third vertebra for upper abdominal operations, at the third or fourth for lower abdominal operation.

Ten cc. of spinal fluid is withdrawn and used as a solvent for 500 mg. of novocain. This makes a 5 per cent solution, 1 cc. containing 50 milligrams of novocain. The tubing holds 2 cc. of this mixture.

The air in the tubing is displaced by novocain, 5 per cent solution. From 2 to 3 cc. of the novocain solution is injected and, with the needle left in place, the patient is turned into position for the operation. Care must be taken to see that the needle does not touch the mattress or table at any place.

The table may now be tilted into a 10 to 15 degree Trendelenburg position which will cause the anesthesia to go to the desired height.

After anesthesia has been established it may be

prolonged easily by small fractional injections of from 50 to 100 milligrams of novocain being used, which will last for from forty to forty-five minutes.

Preoperative medication, as in all spinal anesthesia, is an important factor.

CONCLUSIONS

Continuous spinal anesthesia is a controllable anesthesia. There is no undue drop in blood pressure and no great respiratory difficulty. The length of time it can be made to last is sufficient for any surgical procedure without endangering the patient as one large dose of local anesthesia subdurally often does.

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DISCUSSION

P. F. HUNT, M.D., Kansas City: I want to stress the importance of the use of continuous spinal anesthesia in abdominal surgery. I have used it rather extensively for a good many years for upper abdominal surgery relating to the gallbladder and gastric resection and have found it in my experience to be the anesthetic of choice. But I must sound a warning that it must be used by one experienced in all the fields of anesthesia. Anesthesia has developed into a great specialty. There are so many anesthetic agents that one must be well trained to be an expert, qualified anesthetist, and I do not think spinal anesthesia should be used anywhere unless it is given by a trained anesthetist who knows the dangers. If he is capable of taking care of the complications and can foresee them, I think spinal anesthesia is one of the best anesthetics I know of for abdominal surgery. It gives perfect relaxation, the field is well exposed and one can depend on good access to the field in which he wishes to perform the surgery. If one is going to do resection where there has been previous gastric surgery, it requires considerable time to perform this procedure adequately. Inhalation anesthesia leaves the patient considerably exhausted; it is a long period of time to be under an anesthetic but, in continuous spinal anesthesia one can work more rapidly and has a well relaxed field in which to work, the patient does not suffer from nausea and vomiting as a rule and is not exhausted from the pouring out of large quantities of perspiration during and after the operation. I use it rather extensively for stomach resection, duodenal ulcer and gastric ulcer and it has been thoroughly satisfactory. I usually use spinal anesthesia but, if the patient has had previous upper abdominal surgery, I use continuous spinal anesthesia with excellent success. But it must be administered by one familiar with spinal anesthesia and able to take care of any complications that may arise.

ANDREW J. SIGNORELLI, M.D., St. Louis: I would like to ask Dr. McNearney how soon it is safe to tilt the table more than 10 to 15 degrees Trendelenburg, and is there any danger in overtilting it in lower abdomen and pelvic work in which the surgeon calls for the table to be tilted so the patient is almost on her shoulders? I have done a relatively small series of cases and I agree with Dr. McNearney that it is one of the best and safest anesthetics, but I believe the question of adrenalin and ephedrine, properly used, should have been stressed. How much adrenalin, if any, or ephedrine is used before the patient is given the spinal, and is the ephedrine given after the spinal anesthetic is given? In my series of cases I found a better blood pressure and pulse curve obtained if the patients were given 5 minims of adrenalin thirty minutes before giving them 1 cc. of ephedrine sulphate. The ephedrine sulphate is repeated immediately after the administration of the novocain, which is usually from 100 to 155 mgs. Has

Dr. McNearney had any experience in giving this type of anesthetic to patients who require a total greater amount of anesthetic, that is, giving the same amount of novocain in fractional doses which would have been used for the same procedure in a single large dose? I have found that one has to give approximately from 30 to 40 per cent more by fractional administration. It was brought out that in some cases the slow drip or fractional method was better than a large single dose.

JOE MCNEARNEY, M.D., St. Louis: In spinal anesthesia the table is tilted almost at once to about 15 degrees. The amount is judged by the degree of motion the patient has in his feet; if he can still move his feet it is tilted more and at the end of twelve minutes the patient is put all the way down. I feel the anesthetic will not go higher after twelve minutes time has elapsed. If it is one large dose of spinal anesthesia the patient is left level for the first ten minutes, then the table is tilted slowly and the registration of the blood pressure is watched. If the registration of the blood pressure remains good at the end of fifteen minutes the patient is put in a deep Trendelenburg. The average time it takes to prepare the patient after he is on his back is from eight to ten minutes.

As to ephedrine, if the patient's blood pressure is normal, I give it about six or seven minutes before the spinal anesthesia. If the patient is hyposensitive, ephedrine is given intravenously immediately before the anesthetic is administered; if it is a hypersensitive case the ephedrine is given soon after the spinal anesthetic has been given, as soon as one has a successful spinal. I do not like to give it before that because an increase of blood pressure from the ephedrine might produce a cerebral accident.

CASE REPORTS OF BARNES HOSPITAL

CLINICAL AND POSTMORTEM RECORDS USED IN WEEKLY
CLINICOPATHOLOGIC CONFERENCES AT BARNES
HOSPITAL, ST. LOUIS

W. BARRY WOOD, JR., M.D., AND ROBERT
A. MOORE, M.D., Editors

CASE 31

PRESENTATION OF CASE

W. B., a 21 year old white man, entered the St. Louis City Isolation Hospital on October 17 and died November 5, 1937.

Chief Complaints.—Chills, fever, malaise and diarrhea.

Family History.—Irrelevant.

Social History.—Little information was recorded other than that he spent two years at a vocational school; he smoked moderately and did not use alcohol.

Past History.—As an infant he had whooping cough and pneumonia; measles at the age of 4. The patient was treated for gonorrhea at the age of 18 and also received injections into his hip for several weeks at that time.

Systemic History.—Severe periodic headaches had occurred for many years.

Present Illness.—On October 11, at 10 p. m., the patient began to feel very chilly and soon developed hard, shaking chills. The rigors were relieved somewhat by external and internal applications of

heat. The following day he developed a severe pain in the back and a splitting headache. He felt hot and dry and there were several further chills. On the next morning, a physician diagnosed malaria and prescribed specific medication. The headache and backache, however, increased for the next few days. On October 15, the physician was again summoned and he prescribed calomel because of constipation which had been present two days. Shortly afterward the patient began to vomit and had diarrhea which continued until admission. There were as many as fifteen stools a day and the vomiting also recurred on several occasions. No blood was noted in either discharge. No abdominal pain was present. On the morning of admission a spontaneous nosebleed occurred. On the previous night the patient evidently had aural and visual hallucinations.

Physical Examination.—Temperature was 104 F., pulse 120, respiration 30, blood pressure 120/70. The patient was well nourished and well developed but he appeared acutely ill and toxic. The skin was warm and dry and there was marked flushing of the face and neck. The lips were trembling. He answered questions after hesitation and mumbled his words. The eyes showed an anxious expression but were otherwise normal. The lips were very dry and there were sordes at the corners of the mouth. The tongue had a dry, furry coat. There was no rigidity of the neck. The lungs were clear. The heart was not enlarged; the rhythm was regular; the sounds of good quality, and no murmurs were heard. The pulse rate was 74 and the pulse was definitely dicrotic. The abdomen was moderately distended and there was very slight generalized tenderness. There were one or two suggestive macular spots over the epigastrium which faded on pressure. There were none elsewhere. The liver was not enlarged and the spleen was not felt. There was no enlargement of the palpable lymph nodes. Reflexes were physiologic.

Laboratory Findings.—Blood count: red blood count was not done; white blood count 3,900; "stab" forms 19 per cent; segmented forms 44 per cent; lymphocytes 38 per cent; monocytes 5 per cent. Urinalysis: albumin 3 plus; no sugar; microscopic negative; culture negative for *B. typhosus*.

Course in Hospital.—October 18. Temperature was 105.8 F. The abdomen was definitely more distended. Cyanosis of the lips and face was evident. Later in the day the patient coughed up small amounts of bright red blood which were believed to have come from the nasopharynx. The respiratory rate was 40 and slightly increased tactile fremitus and diminished resonance appeared at the right base posteriorly. Rales were present but there was no alteration of breath or voice sounds. Elsewhere throughout the lungs musical rales were heard. The spleen was palpable for the first time and a few suggestive rose spots appeared on the abdomen. That evening the patient wandered out of his room

and down the corridor where he fell without injury. He was muttering and apparently had hallucinations. Sulfanilamide was given on admission but was discontinued because of the cyanosis.

October 19 and 20. There was little change in the patient's general condition.

October 21. Cyanosis was definitely more marked. The abdomen remained distended and signs in the lungs were unchanged. A transfusion of 225 cc. of citrated blood was given and oxygen inhalation therapy was begun. The white blood count was 5,400.

October 22 and 23. The general condition was unchanged.

October 24 to 29. A definite improvement was observed. The abdomen was less distended. Localized signs in the lungs had disappeared leaving only scattered rales; cyanosis was less and the patient was entirely rational.

October 30 to 31. Numerous typical rose spots appeared and purpuric spots were noted on the backs of the fingers and about the right patella. The sclerae were definitely icteric.

November 1. At 4:00 a. m. the patient passed about 100 cc. of blood in the stool. There was moderate abdominal distention but no localized tenderness or resistance and liver dullness was not obliterated.

November 2. Condition remained unchanged. No further blood was passed.

November 3. Slight generalized edema was noted. Urinalysis was negative. A small amount of blood was passed in one stool. Abdominal signs were unchanged.

November 4. Condition was unchanged.

November 5. At 9:00 a. m. the patient became very cyanotic, dyspneic and extremely restless. There was complete suppression of breath sounds at the right base and many coarse rales were present throughout the remainder of the lungs. The heart showed a gallop rhythm. The pulse was rapid and weak; the blood pressure was 130/80. The abdomen was soft. Oxygen inhalation, caffeine, and two transfusions were given with some improvement in that the cyanosis which had been marked became less, the pulse slowed somewhat and appeared stronger and the dyspnea improved for a few hours. During the afternoon there was a gradual relapse and by 6:00 p. m. the patient was in extremis with an ashen grey color, extreme dyspnea, gallop rhythm, thready rapid pulse, bubbling rales throughout both lungs and production of frothy pink sputum. The patient expired at 11:00 p. m.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: Here is a case in which the primary diagnosis is not too obscure. The patient evidently had typhoid fever with complications. We know nothing of his social history. May we assume, Dr. Harford, with the rigid inspection of water and milk supply in St. Louis and St. Louis County, that he did not pick up the disease from these sources?

DR. CARL HARFORD: Summer before last there was a dairy near Ferguson which was the source of an epidemic.

DR. ALEXANDER: But this case, of course, antedated that epidemic. What happens, Dr. Harford, when a patient ingests typhoid bacilli? What is the process of infection?

DR. HARFORD: The bacilli localize first in the intestine, particularly in the Peyer's patches, and they then produce a septicemia, first by passage into the regional lymph nodes and then probably directly into the thoracic duct and into the blood stream.

DR. ALEXANDER: The organisms apparently do not go directly into the portal capillaries through the liver. This patient on October 10 at 10:00 p. m. suddenly became ill. There is no notation that he had been ill before that time. His chill seemed to mark the onset of the infection. Is that usual, Dr. Harford?

DR. HARFORD: The question has been raised as to whether or not typhoid fever begins with a chill. Many people have had the impression that a chill at the onset of a disease is against the diagnosis of typhoid. Because of this impression, Dr. Huelsmann has studied ninety cases at the Isolation Hospital. He found that 45.4 per cent of them had a history of chill at some time before the laboratory diagnosis was made. The severity was not stated in 28 per cent; it was said to be mild in 6.6 per cent and severe in 10 per cent. I think there is little doubt but that chills may occur during the early stages of typhoid, although it is supposed to be characterized by a gradual onset.

DR. ALEXANDER: You feel then that this sudden onset is unusual?

DR. HARFORD: A little unusual.

DR. ALEXANDER: Dr. Bulger, do you think this unusual?

DR. HAROLD BULGER: A little surprising.

DR. ALEXANDER: Are the signs and symptoms—headache, backache, chills, diarrhea, nausea, vomiting, nosebleed—typical and characteristic?

DR. HARFORD: I think they are.

DR. ALEXANDER: Dr. Scheff, would you agree?

DR. HAROLD SCHEFF: Yes.

DR. HARFORD: Diarrhea occurs in a minority of cases.

DR. ALEXANDER: Is constipation common?

DR. HARFORD: Very common.

DR. ALEXANDER: What about vomiting as an early sign of typhoid fever?

DR. HARFORD: Dr. Huelsmann looked into that point too, and of his patients 26 per cent had a history of emesis in the early stages.

DR. ALEXANDER: That is interesting, because there is an impression that typhoid patients do not vomit. This man had sordes. What about herpes in typhoid?

DR. HARFORD: It is very unusual.

DR. ALEXANDER: Yes, with malaria and pneumonia, herpes is common; but with typhoid it is extremely rare. Can we identify positively the onset of this patient's illness? Do you believe that he received his infection the day before or the day of the onset of his symptoms? Can we gather anything from statistics or from clinical experience which bears on these laboratory reports? When he came in he had a positive blood culture. When does bacteremia usually occur?

DR. HARFORD: The blood stream usually is invaded during the first week and clears some time during the second week, unless there is a relapse.

DR. ALEXANDER: What about the agglutinative titer of the serum in a dilution of 1 to 640?

DR. HARFORD: The Widal test is only significant if the patient has never had any immunization. I suppose we can assume that this patient had not been immunized.

DR. ALEXANDER: Would a patient build up antibodies to that extent in a week?

DR. HARFORD: Not ordinarily.

DR. ALEXANDER: When does the antibody titer usually rise?

DR. HARFORD: During the second or third week.

DR. CARL MOORE: I wonder if there is any information as to other causes of chills in typhoid. I wonder if they are related to the pouring of organisms into the blood stream, so that this positive culture might represent a relapse. Bacteremia occurs early in the disease but the positive Widal in high dilution is against the disease being in an early stage. Sometimes a relapse may occur as early as the end of the second week.

DR. ALEXANDER: How can a patient relapse when he is still sick?

DR. HARFORD: It is possible that this patient had so-called "walking typhoid," and then a serious relapse.

DR. ALEXANDER: That would reconcile the discrepancy; a mild, undetected case of typhoid and then a relapse. If that is so, what about the stool culture? It was negative on his first admission. When do stool cultures become positive?

DR. HARFORD: About the third week.

DR. ALEXANDER: Why do you suppose they do not become immediately positive?

DR. HARFORD: The stool cultures become positive at the time when the Peyer's patches begin to slough off and produce ulcers.

DR. ALEXANDER: If the gallbladder is infected early, would not one expect a positive stool culture? I think Dr. Frederick Gay found that typhoid organisms can be grown if they are transplanted frequently on rabbit blood agar. It was his feeling that they will not grow on the usual media. The usual media on which typhoid bacilli from the stools are grown do not contain bile. He believed that they could be grown early in the disease if there was some bile in the medium. He felt that the stools of typhoid are infectious right at the start of the disease. Are positive cultures in the stool constant?

DR. HARFORD: They are not constant at all. They are very irregular—positive one day and negative the next.

DR. ALEXANDER: How many cases will show no positive cultures?

DR. HARFORD: Very few. Less than 20 per cent.

DR. ALEXANDER: What about the urine cultures? What are the Board of Health requisites regarding the discharge of patients from the hospital?

DR. HARFORD: From a week to ten days of normal temperature, and three consecutive daily urine and stool cultures which are negative.

DR. ALEXANDER: So there is a certain number of cases, about 20 per cent, in which there is no positive stool culture. It is possible that some of these cases constitute the typhoid carriers. Do you think that is so?

DR. HARFORD: I am inclined to think that the percentage of positive cultures may depend more on technic. The organism grows very well on simple media.

DR. ALEXANDER: This patient had hemorrhage. What signs of hemorrhage in typhoid may one expect?

DR. SCHEFF: Shock, tachycardia, subnormal temperatures, weakness and fainting.

DR. ALEXANDER: Do you think this temperature chart looks like that of typhoid, Dr. Glassberg?

DR. BERTRAND GLASSBERG: No. There is not enough disproportion between the temperature and the pulse. This patient may have had a good deal of myocardial degeneration and that might account for a more rapid pulse than one would expect ordinarily.

DR. ALEXANDER: What are the cardiac lesions to be expected?

DR. GLASSBERG: Endocarditis and pericarditis are rare, but not infrequently a soft flabby myocardium with loss of cross striations is observed.

DR. ALEXANDER: It is interesting that one gets a fast dicrotic pulse following hemorrhage. The hemorrhage in this case was evidently not very severe. But something suddenly happened to this patient on the last day

of his illness. There were signs of suppressed breath sounds at the right base. Dr. Goldman, what do you presume might have happened? What about his early bronchitis? Cough and rales are common early in the disease, are they not?

DR. ALFRED GOLDMAN: Yes. The organism present is most commonly a pneumococcus or streptococcus.

DR. ALEXANDER: Might this have been a pneumonia which developed?

DR. GOLDMAN: At the end of the first week he had signs in his lung which later cleared up. Toward the end the suppression of breath sounds was suggestive of fluid. Pulmonary edema is a possibility.

DR. ALEXANDER: What do you expect to find in his lungs?

DR. GOLDMAN: The signs of suppression of breath sounds and coarse rales suggest fluid in the right base and pulmonary edema throughout the lungs.

DR. ALEXANDER: What about pleurisy with effusion in typhoid?

DR. HARFORD: It may occur but it is rare.

DR. PAUL HAGEMAN: The history states that at 9:00 a. m. the patient became very cyanotic, dyspneic and restless. The implied suddenness of these symptoms makes me suspicious that he had had a pulmonary embolus.

DR. ALEXANDER: Is that a recognized lesion in typhoid?

DR. HAGEMAN: Yes. It comes from a thrombus in a vein, often in the leg.

DR. ALEXANDER: Dr. Goldman, do you think this might have been an infarct?

DR. GOLDMAN: It is one of the things that might occur. There was no mention of pain in the legs, although the patient did have some edema.

DR. ALEXANDER: Are there any other suggestions? Dr. Moore?

DR. CARL MOORE: I am in favor of Dr. Hageman's suggestion.

DR. ALEXANDER: Could the pulmonary lesion be that of atelectasis?

DR. HARFORD: It has been noted that during the course of severe typhoid, particularly when a patient is delirious, there may be aspiration pneumonia. You would have to assume this to suggest atelectasis.

DR. ALEXANDER: Are the signs and symptoms in keeping with sudden pulmonary collapse?

DR. HARFORD: It is a possibility.

DR. ALEXANDER: Dr. Harford, it says nothing here about how this patient was treated. Will you tell us how one treats typhoid fever from a dietary standpoint?

DR. HARFORD: In typhoid fever, the diet, nursing care and watching out for complications are all that can be done since sulfonamide therapy is not known to be effective. There are two principles about the diet: it must be adequate in nutrition and low in residue so that ulcers in the intestine may be traumatized as little as possible. It has been shown that if sufficient calories are given it is possible to keep a patient from losing weight. It has also been shown that in the ordinary course of the disease there is a negative nitrogen balance which may be corrected by increasing the carbohydrate of the diet. It is also probable that there is a need for greater amounts of vitamins than are present in the normal human diet.

DR. ALEXANDER: What if the patient will not eat?

DR. HARFORD: This is the greatest problem. In the absence of a specially trained nurse who sits by the bedside and urges the patient to eat throughout all his waking hours, feeding by nasal tube is often advocated.

DR. ALEXANDER: Is there danger of aspiration pneumonia?

DR. HARFORD: I suppose there is some danger.

DR. ALEXANDER: What if there is intestinal bleeding?

DR. HARFORD: It is usually better to stop feedings for a few hours or a day to give the bleeding points a chance to clot.

DR. ALEXANDER: Dr. Bulger, what is your explanation of the edema that began to develop in this patient?

DR. BULGER: All the older clinical descriptions speak of chronic parenchymatous nephritis as a complication. This patient had a three plus albuminuria. It is possible there was a nephritis. However, there is also evidence that this patient had circulatory failure.

DR. ALEXANDER: Is there any other explanation for the edema?

DR. SCHEFF: It might have been a nutritional edema.

DR. ALEXANDER: A nutritional edema in either of two senses: Inadequate nutrition or excessive intake of parenteral fluids. Does edema ever result from overloading with fluid?

DR. BULGER: Yes, if enough sodium accompanies it.

DR. ALEXANDER: What lesions do you think we shall find, Dr. Harford?

DR. HARFORD: We shall probably find ulcers in the lower part of the ileum, enlarged mesenteric nodes and an enlarged spleen.

DR. ALEXANDER: What will the lesions of the mesenteric nodes show?

DR. HARFORD: Merely enlargement.

DR. ALEXANDER: Will we find anything in the liver?

DR. GLASSBERG: Cloudy swelling and degeneration associated with the cloudy swelling.

DR. ALEXANDER: Is there focal necrosis?

DR. SCHEFF: Yes.

DR. ALEXANDER: What other lesions are there?

DR. GLASSBERG: Myocardial lesions. I would like to suggest a chronic interstitial pneumonia because of the history of a long standing pneumonia which probably did not resolve.

DR. ALEXANDER: There were no signs of pneumonia until the last day. In the lung one may possibly find fluid, a pulmonary embolus, infarcts of the lung, collapse. Anything else?

DR. HARFORD: I would like to ask you a question. How do you account for the purpuric lesions?

DR. ALEXANDER: I know nothing about purpura in typhoid fever.

DR. HARFORD: It has been stated that rose spots may become hemorrhagic if severe enough. The fact that there was purpura, however, suggests endocarditis. We have had one case at Isolation Hospital with strongly positive blood cultures in which there was a typhoidal endocarditis.

DR. CARL MOORE: Any severe toxemia may give enough capillary damage to cause purpura so that in the absence of specific findings of endocarditis I think we need not consider it a possibility.

DR. WAYLAND MACFARLANE: Do you think this patient had syphilis?

DR. ALEXANDER: Dr. Hageman, do you think so?

DR. HAGEMAN: I think it would be very difficult to say. I rather doubt that we will find any lesions. In the presence of the high fever it is hard to interpret this positive Wassermann reaction.

DR. ALEXANDER'S DIAGNOSIS

Typhoid fever.

CLINICAL DIAGNOSIS

Typhoid fever.

ANATOMIC DIAGNOSIS

Typhoid fever.

Hyperplasia and ulceration of Peyer's patches of the ileum, cecum and colon.

Hyperplasia and focal necrosis of the mesenteric lymph nodes.

Focal necrosis of the liver, spleen and adrenal glands.

Hyperplasia of the spleen.

Bronchopneumonia.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: I would like to present the pathologic material in a different way. Let us turn our attention first to the general manifestations of the disease rather than to the specific manifestations and look at the heart, which was of normal size. The muscle was pale and flabby. The fibers were swollen and in some the cross striations were indistinct while in others the cytoplasm was more homogeneous and deeply acidophilic. The liver was of normal size and shape. The lobular architecture was well preserved. In the center of each hepatic lobule there was necrosis of the hepatic cells and infiltration with polymorphonuclear leukocytes. The sinusoids remained open and contained only a few large mononuclear cells. In addition to these foci of central necrosis there were numerous regions of focal necrosis. In these regions the liver cells were entirely necrotic and had undergone complete autolysis. The sinusoids were distended and filled with large mononuclear cells. Throughout all parts of the liver there was general disruption of the cords of liver cells, a type of histologic change frequently seen with hyperpyrexia. The kidneys were of normal size and the only general pathologic change was cloudy swelling of the tubular epithelium and the deposition of an acidophilic, non-nucleated debris within the capsular space and within the lumens of the tubules. The spleen was large and weighed 400 Gm. The splenic pulp was red in color and soft in consistency. The malpighian bodies were indistinct. Microscopically, one observed a decrease in the size of the malpighian bodies and heavy infiltration of the red pulp with large mononuclear cells and lymphocytes. The adrenals were grossly normal but microscopically showed two pathologic changes: foci of necrosis in the cortex and depletion of the lipid from the cortical cells. The lungs were heavy and from the cut section a moderate amount of red, frothy fluid exuded. This was seen microscopically as congestion of the vessels and the filling of the alveoli with a homogeneous, acidophilic precipitate.

From these general observations it is apparent that we are dealing with a severe infection, probably with a bacteremia. There is evidence of advanced capillary damage—200 cc. of clear fluid in each pleural cavity, 200 cc. in the pericardial cavity, and 200 cc. in the peritoneal cavity, albumin in the urine and edema of the lungs. The general evidences of infection are given by the hyperplasia of the spleen.

Further, we know that this man had not been ill for many weeks since he was well nourished at the time of death. On the other hand he had been so ill that he lay in bed on his back continually and did not move about, as shown by the development of decubital ulcers over the sacrum and buttocks. We know that he probably had a hyperpyrexia for several days before his death.

The mesenteric lymph nodes were more enlarged than any other lymph nodes and this suggests that the portal of entry and the primary lesion were in the intestine. The mesenteric lymph nodes were not only enlarged but contained large and small areas of necrosis and liquefaction. The enlargement was for the most part the result of edema, congestion, and hyperplasia of mononuclear cells.

The stomach, duodenum, jejunum and colon were normal. In the ileum the lymphoid tissue both in Peyer's patches and in the solitary follicles was enlarged and projected into the lumen for 2 or 3 mm. In the centers of many of these enlarged follicles there was superficial ulceration. Microscopic study revealed hyperplasia of reticulum cells and infiltration with mononuclear cells and lymphocytes. There were no polymorphonuclear leukocytes. The large mononuclear cells contained phagocytized lymphocytes and red blood cells. The endothelium of the small capillaries was swollen.

We now have the facts to make a definite diagnosis: typhoid fever. But we must reexamine all of the findings of the case to determine whether or not this man had some other disease. The pancreas was grossly normal but, microscopically, showed edema and infiltration with leukocytes into the interstitial tissue, the characteristic picture of acute interstitial pancreatitis. In the kidney the prosector noted numerous small abscesses and microscopically these were seen as small foci of necrosis and infiltration with leukocytes. In the lung there was a bronchitis and bronchopneumonia in which the predominant cell was the leukocyte. Which, if any, of these were caused by the typhoid bacillus? The reaction in all was with polymorphonuclear leukocytes rather than with the mononuclear cells and lymphocytes, which are characteristic of lesions caused by *Eberthella typhi*. In the kidney we were able to demonstrate gram-positive cocci in the abscesses. Hence it is my conclusion that each of these three lesions, acute pancreatitis, acute pyelonephritis and bronchopneumonia, must be looked upon as complications caused by other bacteria or agents rather than as an essential part of typhoid fever.

It is not possible to give a definite answer to your question concerning the duration of the disease in this man. In general, hyperplasia of the follicles reaches a maximum at the end of the second week. Ulceration is a prominent feature in the third week. I would guess that this man probably developed typhoid fever shortly before his admission to the hospital and that he died toward the end of the third or early in the fourth week. There must be added that this was an extremely virulent form of typhoid, with marked necrosis in the mesenteric lymph nodes. We found no anatomic evidence of syphilis, but this should not be regarded as conclusive that the man did not have syphilis. It takes some years for most of the characteristic lesions of syphilis to develop after the primary infection.

DR. ALEXANDER: You identified the lesions in the liver as being caused by a bacteremia. Do you expect to find bacteria in those lesions?

DR. MOORE: We have not stained the sections in this case, but there are many descriptions in the literature of typhoid bacilli among the endothelial cells in focal necroses of the liver.

CASE 32

PRESENTATION OF CASE

The patient was a white married woman, 32 years of age, who entered Barnes Hospital on May 24, 1943, and died on September 4, 1943.

Chief Complaint.—Persistent diarrhea of about fourteen months' duration.

Family History.—Mother and father were both living and in good health. One of the patient's sisters died at the age of 14 years with typhoid fever. The other children in the family were living and well. No history of familial disease was elicited.

Marital History.—She had been married for seven and one-half years; husband well at the age of 34 years. First pregnancy was terminated by a spontaneous abortion in January 1942 at about the sixth week of gestation. The patient became pregnant immediately thereafter and was delivered in December 1942 of a normal, healthy baby. The child is still living and is well.

Social History.—The patient was a native of the Middle West and had lived in St. Louis for many years. She had a high school education and did several extra years of work at a night school. Un-

til her marriage she worked as a secretary. Her diet was good and she did not use either alcohol or tobacco.

Past History.—The patient's health had always been good. She had a postnasal drip for many years with occasional attacks of tonsillitis. During the third trimester of her pregnancy, she developed hemorrhoids. Menses began at the age of 12 years and were always regular, of four days duration. Dysmenorrhea was troublesome until her marriage but it then entirely disappeared. Four times during the last twelve years, the patient developed a severe pain in the lower lumbar region which would be so acute that she would be unable to move. On several occasions she fell to the floor during these attacks. The pain would last for a few hours and then disappear without leaving her incapacitated in any way. There was a weight loss of 13 pounds during the two and one-half weeks prior to her admission to the hospital. Venereal disease was denied.

Present Illness.—During the second month of her second pregnancy (March 1942) the patient began to have attacks of vomiting and diarrhea. These two manifestations usually would appear simultaneously. Emesis often occurred shortly after meals of small bits of food. The stools were watery at first and contained no mucus or blood. The diarrhea was aggravated by standing and by any physical activity. Some abdominal cramps were present. These symptoms disappeared in a few days but after a remission which lasted from two to three weeks, the diarrhea recurred and rapidly became severe. There would be as many as from ten to fifteen stools per day and the fecal matter was noted to contain much mucus and some streaks of bright blood. The tenesmus associated with her diarrhea caused much discomfort. A second remission, this time only partial, occurred during the early months of 1943. About the first of April, however, the diarrhea again became very severe. At times her stool contained only mucus and fresh blood. Her physician sent samples of the stool to Dr. Tsuchiya who found *Endamoeba coli* and flagellate organisms identified as *Chilomastix mesnili*. On the first of May a barium enema was recorded as being negative. Proctoscopic examination showed an ulcerated granular and friable mucosa of the rectum and lower sigmoid which bled easily. Carbasone was given for ten days without relief. On May 19, 1943, tender lymph nodes appeared in both inguinal regions and the patient began to run a low grade fever for the first time. On May 23, 1943, the tenesmus and abdominal cramps became so severe that hospitalization was recommended. The patient had been confined to bed during most of the two and one half weeks previous to hospital admission but prior to that time she had continued to do her own housework and to take care of her child.

Physical Examination.—Temperature was 37.4 C., pulse 80, respiration 16, blood pressure 150/100.

At the time of admission to the hospital, the patient appeared to be a well nourished woman who was alert, cooperative and not acutely ill. The skin showed no abnormalities. There was no abnormality of lymph nodes except for slight enlargement of the inguinal nodes. Head and neck were normal. Chest was symmetrical, expanded equally on two sides with respirations that were costo-abdominal in type; lung fields were clear to auscultation and percussion. The point of maximum cardiac impulse was in the fifth intercostal space about the midclavicular line. Heart sounds were of good quality, no murmurs, no thrills; rate and rhythm were normal. Abdominal contour was normal, some moderate tenderness was noted across the lower quadrant. No masses or organs were felt. There were no signs of fluid. Vaginal examination was negative. There were a few external hemorrhoidal tabs; there was good sphincter tone. The extremities were normal and neurologic examination gave no abnormal findings.

Laboratory Examination.—Blood count: red blood cells 3,400,000, hemoglobin 8.4 grams, white cells 9,800, platelets adequate, differential count: eosinophils 2 per cent, "stab" forms 9 per cent, segmented forms 60 per cent, lymphocytes 18 per cent, monocytes 11 per cent. The red cells showed moderate anisocytosis and were recorded as being slightly hyperchromic. Bleeding time 3 minutes and 40 seconds, clotting time (Howell tube method) 7 minutes and 30 seconds, prothrombin time 74 per cent of normal, clot retraction good. Urinalysis showed a specific gravity of 1.020, reaction pH 5.5, trace of albumin, no sugar, guaiac negative. Microscopically a few red blood cells and white blood cells were seen but there were no casts. Subsequent urine analysis showed the specific gravity of urine to vary from 1.003 to 1.020; a trace of albumin was consistently present. Stool was brown in color, soft and contained much mucus. The guaiac and benzidine reactions were strongly positive. There was no increase in the amount of neutral fat and no ova or parasites were observed. (Dr. Tsuchiya examined six specimens.) A stool culture was obtained and the following organisms identified: *B. coli*, *B. proteus*, *Streptococcus fecalis*, and *Staphylococcus albus*. Blood Kahn reaction was negative. Blood culture obtained on May 25, 1943, showed no growth. Agglutination reactions for *B. typhosus* and *Brucella* were negative. The Frei and first strength tuberculin (P.P.D.) tests were negative. Nonprotein nitrogen was 11 mg. per cent. Fasting blood sugar 83 mg. per cent. Total protein was 5.9 grams per 100 cc., albumin 3.7 grams and globulin 2.2 grams. Subsequent determinations of the plasma proteins were made many times during the patient's stay in the hospital and similar figures were always obtained.

Clinical Course.—During the first eleven weeks in the hospital, the patient had from one to five stools per day. Initially she was given sulfasuxadine but this was changed shortly thereafter to sul-

fadiazine with doses large enough to maintain a blood level of from 5 to 9 mg. per cent. On the second hospital day, a transfusion of 500 cc. of blood was given. Because this was attended by a rise in temperature to slightly above 39 C., the Transfusion Service reinvestigated the patient's blood type, found her to be type A, subgroup 1 and used only this specific subgroup for subsequent transfusions. In addition to the sulfonamide therapy, the patient was given sources of the vitamin B complex and vitamin C, Koamagama as a retention enema twice a day and occasional doses of nembutal and codeine. A sigmoidoscopic examination done on June 11, 1943, showed a granular inflammatory reaction in the lower half of the ampulla of the rectum; no note was made about the appearance of the mucosa of the sigmoid. Barium enema was again essentially negative. About that time, the patient complained of having passed flatus several times from her vagina. On June 14, 1943, she called the house officer because a portion of the retention enema had been expelled from her vagina. Examination showed the presence of a rectovaginal fistula just outside the hymenal ring. Throughout this period and for the remainder of her life, the patient occasionally passed from 100 to 300 cc. quantities of blood from her rectum and anus (sometimes twice in a day). In order to maintain the red cell count at a level greater than 3,000,000 cells, occasional transfusions were given. On July 12, 1943, another sigmoidoscopic examination was made in order that a piece of the rectal mucosa might be obtained for biopsy. During the preliminary rectal examination, a large quantity (greater than 100 cc.) of bloody purulent fluid gushed from the rectum and the examiner thought than an abscess had been ruptured. No evidence of the abscess cavity could be found on thorough search, however, and the rectal mucosa again appeared red, granular and covered with exudate. Two small bits of rectal mucosa were removed for microscopic study; these showed only the evidences of chronic inflammation. A second perineal abscess developed in the middle of July and the whole of the anus became ulcerated. On July 26, 1943, another biopsy specimen was obtained from the rectum and anus. This tissue was again reported to show only chronic inflammation. Throughout all of this period, the patient ran a low grade fever with temperature elevation to approximately 38 C. each day. In spite of her symptoms and her bleeding, however, she managed to eat enough to maintain a fairly satisfactory nutritional status.

During the first week in August she became more acutely ill. The appearance of an abscess in the right deltoid region was followed shortly by multiple small abscesses of the skin with particularly tender lesions on the inside of the left knee and over the right Achilles tendon. At the site of each hypodermic injection, a small abscess formed. There was pain in the right chest but physical signs remained normal. On August 2, 1943, she

became lethargic and several days later had two chills. Liver and spleen were palpable two finger breadths below the costal margin. There was a leukocytosis with moderate shift to the left in the differential count. Blood cultures remained negative but a nonhemolytic *Staphylococcus aureus* (nonmannite fermenter) was grown from each of the small cutaneous abscesses which were cultured. Temperature rose to 39.8 C., became septic in type and the diarrhea increased in severity. Beginning on August 10, 1943, penicillin therapy was begun. It was given as follows: 20,000 units every two hours for twelve doses followed by 20,000 units every four hours for an additional thirty doses. The disappearance of skin abscesses was quite dramatic, subjective improvement was marked and the temperature dropped to approximately normal on August 16, 1943, the day after penicillin was discontinued. One observer noted the appearance of erythema nodosum on August 8, 1943, but no further description of the lesion was given. A rough apical systolic murmur was then present. Liver and spleen could no longer be felt. On August 8, 1943, a colostomy was done in the left lower quadrant, using the highest part of the sigmoid that could be drawn into the wound. This portion of the bowel was thought to be edematous but otherwise normal. Following the operation the patient became distended, vomited frequently, continued to pass blood and pus from the rectum and had to be transfused frequently because with the loss of blood her blood pressure frequently fell to a systolic of 90 millimeters and her pulse became very rapid and thready. On August 27, 1943, she passed several tarry stools from the colostomy opening and thereafter there was hemorrhage from the proximal loop of the sigmoid as well as from the rectum. Prothrombin was normal. The bleeding was so extensive that daily transfusions, sometimes of 1,000 cc. of whole blood or more, served only to maintain her red cell count at approximately 3,500,000 cells. On August 29, 1943, cutaneous pustules again began to form and some also appeared on the soft palate. The administration of sulfadiazine was reinstituted and the temperature again fell to normal. By September 2, 1943, most of the pyogenic abscesses had disappeared entirely. On the following day she passed large dark clots from the colostomy stoma and her blood pressure fell to 58/40. The administration of 2,000 cc. of blood served to elevate the blood pressure only slightly and at 12:30 a. m. on September 4, 1943, she had a generalized clonic convulsion, lapsed into coma and never regained consciousness. Blood was given almost continuously so that during the last twenty-four hours of her life she received eleven pints of blood. Several hours after the convulsion she became cyanotic and oxygen was given by nasal tube. She expired at 7:30 a. m.

CLINICAL DISCUSSION

DR. CARL V. MOORE: This woman had a disease, the primary manifestations of which seem to have been

localized in the colon. Approximately twenty-one months elapsed between the time symptoms first occurred and the time of her death. In considering the diagnosis I am sure most of us would agree with the clinicians who saw her that the likeliest diagnosis is ulcerative colitis. It is unquestionably my first choice. We should, however, discuss the other diagnostic possibilities. Dr. Larimore, do you care to make any other suggestions?

DR. JOSEPH LARIMORE: There is evidence only for a diagnosis of ulcerative proctitis. It should also be pointed out that true ulceration was not seen on any of the proctoscopic examinations. There was a granular exudative lesion of the mucosa for which no causal agent was discovered. In the history of this case there are a number of points which are at variance with the usual history in ulcerative colitis: the abscesses in the perineum, the blood infection and the involvement of the heart. Consequently I believe that this patient had two diseases; perhaps the original disease, ulcerative proctitis, was the portal of entry for a secondary involvement.

DR. MOORE: You do not suggest any other diagnosis for the lesion in the rectum or the colon?

DR. LARIMORE: One might think of lymphogranuloma inguinale, but the Frei test was negative. The presence of abscesses and the occurrence of a rectovaginal fistula are more frequently seen with lymphogranuloma than with ulcerative proctitis.

DR. CHARLES W. DUDEN: My first choice, too, is ulcerative colitis. But one probably should include amebic dysentery as a possibility.

DR. MOORE: What factors would be in favor of or against a diagnosis of amebiasis?

DR. DUDEN: Opposed to it is the fact that amebae were not found in the stool after diligent search.

DR. MOORE: Do you know in what percentage of cases the organisms are found?

DR. DUDEN: Certainly in not more than from 60 to 65 per cent of cases, and that is probably a liberal estimate. However, carbasone was given, which shows that amebiasis was at least considered. Apparently this therapy did not result in any improvement.

DR. MOORE: Is the appearance of the rectal mucosa as described upon proctoscopic examination compatible with amebic dysentery?

DR. DUDEN: No. No ulcers were found. But the gushing of blood and pus on one occasion suggests that an eroding abscess had been opened. This could occur in either ulcerative colitis or in amebic dysentery, but would be more likely in the latter.

DR. MOORE: Would a biopsy of the rectal mucosa be worth while?

DR. ROBERT MOORE: It is possible. The value of a biopsy depends on the selection of the pieces of tissue—how large it is and how active the lesion is.

DR. CARL V. MOORE: Dr. Duden, are there any other diagnoses to be considered?

DR. DUDEN: I thought of another, although I am not enthusiastic about it—polyposis of the colon, with perhaps a malignant change. Polyposis was found as a complication of ulcerative colitis in about 10 per cent of the 693 cases in Bagen's series. The age of this patient and the duration of the disease are against it in this case.

DR. CARL V. MOORE: In addition, polyposis is not often accompanied by an almost constant diarrhea; the diarrhea usually alternates with periods of constipation. Do you think the diagnosis of tuberculosis needs to be given serious consideration?

DR. DUDEN: No, I do not. There is no evidence of cecal involvement. Apparently from the roentgen ray examination the cecum was normal and we were not told that there were any other foci. There was no family history of tuberculosis.

DR. CARL V. MOORE: How frequently can tuberculous enterocolitis occur without pulmonary tuberculosis?

Is the fact that this patient did not have pulmonary tuberculosis necessarily proof that tuberculosis of the intestine can be entirely ruled out?

DR. DUDEN: It almost eliminates it.

DR. CARL V. MOORE: In tuberculous enteritis, massive hemorrhage is rare. Do you think we need to consider a diagnosis of a carcinoma of the colon?

DR. DUDEN: No.

DR. CARL V. MOORE: Dr. Sale, what suggestions do you make?

DR. LLEWELLYN SALE: I think we should give some consideration to other forms of granulomatous inflammation of the intestine—the sort of thing called regional ileitis when it occurs in the terminal ileum. It is frequently complicated by formation of fistulous tracts with other organs or with the outside. This condition is not confined to the ileum, although it was first described in the ileum.

DR. CARL V. MOORE: How likely is it that this diagnosis would have been made on the roentgenologic examination?

DR. SALE: If it involved the ileum, this one film which showed some regurgitation into the terminal ileum might be significant. There was no careful study made of the pattern of the small intestine after a barium meal. Vomiting was a prominent symptom at the onset of the disease.

DR. CARL V. MOORE: Certainly regional ileitis should be considered. Are there any other possibilities? Dr. Wilson, you saw this patient clinically—would you care to make any other comments?

DR. KEITH WILSON: I do not believe so. She had a ten day course of carbasone which should have been adequate, and some of the vomiting occurred after that. There was a radiographic examination about a year before she entered the hospital and that was entirely normal.

DR. CARL V. MOORE: There is one other possibility. What about a diverticulitis, Dr. Duden?

DR. DUDEN: I think that is very unlikely for the same reason that you advanced against the possibility of tuberculosis—the hemorrhage. I should think hemorrhage of this kind would be even more uncommon in diverticulitis than in tuberculous ulceration.

DR. CARL V. MOORE: It is obvious that everyone believes these various possibilities, except ulcerative colitis, to be unlikely.

DR. LARIMORE: May I suggest that the colitis might be the result of the diarrhea and not the primary disease?

DR. CARL V. MOORE: How frequently does that happen?

DR. LARIMORE: You might get a similar picture of proctitis after a long-continued diarrhea. This patient had been ill with diarrhea for fourteen months before she came to the hospital.

STUDENT: Would you consider actinomycosis?

DR. DUDEN: There have been two cases in the hospital recently. That should exhaust the statistical possibilities.

DR. CARL V. MOORE: I think we may go back now to a discussion of ulcerative colitis. The diagnosis usually can be made with the greatest accuracy by direct examination of the rectal or sigmoid mucosa, and also by a barium enema. It is relatively surprising that the barium enema in this patient was entirely normal on two different occasions. This suggests that the lesion was confined to the rectum. In Bagen's series, the ulceration was found only in the rectum in 20 per cent of the cases. Dr. Duden, in spite of the roentgenologic opinion, do you believe the lesion was confined to the rectum?

DR. DUDEN: Blood was seen coming from the proximal segment of the colostomy opening rather than from the rectum. If this is true I should think that other segments of the colon were involved.

DR. CARL V. MOORE: From a roentgenologic point of

view could one say that any portion of the colon proximal to the rectum and sigmoid would most likely be silent on the barium enema? I was wondering if there was any greater possibility of that lesion being in the cecum.

DR. LARIMORE: The barium enema was entirely negative. The lesions in the rectum did not show in the barium enema.

DR. WILSON: What about the possibility of the ulceration developing in the upper part of the colon after the operative procedure was done? The surgeon seemed to think the colon felt and looked normal except for a mild edema.

DR. CARL V. MOORE: The only thing we can say with reasonable certainty is that there was a lesion proximal to the sigmoid. Whether it occurred before or after the operation can only be conjectured.

DR. ROBERT MOORE: Is it significant that the radiograph was taken in June and the bleeding from the proximal part of the colon was not demonstrated until the middle of August?

DR. CARL V. MOORE: It certainly may be. Bleeding because of a prothrombin deficiency occurs frequently in persons with ulcerative colitis. Dr. Smith, do you believe the two prothrombin times, one recorded in June and one in August, would be enough to eliminate the possibility of hemorrhage resulting from prothrombin deficiency or a defect of coagulation?

DR. JOHN SMITH: I think so. Do you?

DR. CARL V. MOORE: Yes. Seventy-four per cent is low, but hardly low enough to account for hemorrhage. It is significant that she passed large clots of blood. The passage of clots of blood occurs fairly frequently in ulcerative colitis. What do you think should be considered in the way of complications, Dr. Duden? Obviously a perirectal abscess was present on two occasions. There were cutaneous lesions. Something happened to the patient during the first week of August. There was a relatively rapid rise in temperature and two chills occurred. Her liver and spleen became palpable and there was an abscess in her right deltoid region. It was suspected of course that she had a septicemia but all blood cultures were negative. Nonhemolytic *Staphylococcus aureus* was cultured from the skin abscesses.

DR. CARL HARFORD: I do not think we can assume she had a septicemia, but this evidence is in favor of the occurrence of a bacteremia.

DR. CARL V. MOORE: Do you think the organisms recovered were those which gave her the bacteremia?

DR. HARFORD: Yes, for they were recovered from several lesions. The fact that they did not ferment mannite does not exclude them as pathogenic organisms, although it is unusual.

DR. CARL V. MOORE: The penicillin therapy effected great improvement, but it was observed that a rough systolic murmur at the apex appeared. Are you willing to interpret that as evidence of endocarditis, Dr. Smith?

DR. JOHN SMITH: I should think bacterial endocarditis would have to be considered very seriously. I presume this murmur was not there previously.

DR. CARL V. MOORE: Apparently it was not. Do you think the terminal convulsion might have been the result of an embolus from the left side of the heart to a cerebral vessel?

DR. SMITH: Possibly. I think the convulsion more likely was the result of sudden fall in blood pressure and generalized cerebral anoxemia.

DR. CARL V. MOORE: Is there any possibility of the terminal event being a transfusion reaction? She received eleven pints of blood in the last twenty-four hours and was receiving blood at the time of the convulsion.

DR. SMITH: I do not think so.

DR. WILSON: Do you think she got too much citrate with all these transfusions?

DR. CARL V. MOORE: That question is very important

at the moment, and many people are devoting their time to a study of the possible toxic effects of citrate. However, if the citrate had caused a hypocalcemia, one would have expected tetanic rather than clonic convulsions. I would be willing to state that this patient had an ulcerative colitis, with perirectal abscesses, and most likely an endocarditis, which might have thrown off an embolus to cause the terminal event.

DR. CARL V. MOORE'S DIAGNOSIS

Chronic ulcerative colitis.
Rectovaginal fistula.
Bacterial endocarditis (?).

CLINICAL DIAGNOSIS

Chronic ulcerative colitis.
Rectovaginal fistula.

ANATOMIC DIAGNOSIS

Chronic ulcerative colitis, most marked in rectum and ascending colon.

Rectovulvar and anal fistulae.

Fibrous peritoneal adhesions in pelvis.

Acute nephrosis (history of administration of sulfasuxadine and sulfadiazine).

Acute pyelonephritis.

Unhealed and partly healed ulcers of the skin of the right arm and the back (history of gangrenous pyoderma).

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: The lesions in the colon of this patient were characteristic of chronic ulcerative colitis. Ulcers were present in all parts of the colon, but were most conspicuous in the rectum and in the ascending colon. The base of most of the ulcers was formed by the circular muscle of the intestinal wall.

In the kidney there were acute degenerative changes with calcification such as we have frequently seen in patients receiving one of the sulfonamide drugs. There were in addition some abscesses characteristic of acute pyelonephritis. The dominant cell, however, in these abscesses was the lymphocyte with fewer numbers of plasma cells and leukocytes. It is possible that the treatment with penicillin modified the appearance of the abscesses. The heart was essentially normal.

VISCOSSE TUBING FOR TRANSFUSIONS

Because the cleansing of rubber tubing to be used for intravenous administration of blood or blood protein is difficult and incomplete cleansing is believed to be a major cause of pyrogenic or fever producing reactions, a heavy walled Viscosse tubing (made of a synthetic substance) is used by Henry Naftulin, A. M. Wolf, M.D., and S. O. Lavinson, M.D., Chicago, they report in *The Journal of the American Medical Association* for October 9.

NEW SYNTHETIC FEMALE SEX HORMONE

A new synthetic female sex hormone, octofollin, is effective in the treatment of female climacteric or change in life and appears to be relatively nontoxic in contrast to diethylstilbestrol, another synthetic female sex hormone which has been in use lately, according to the statements in two reports in *The Journal of the American Medical Association* for October 2. Alvin Ray Hufford, M.D., Grand Rapids, Mich., from the results he obtained in treating 21 women, says octofollin, when administered by injection into a muscle, was effective and nontoxic. Harold K. Roberts, M.D.; Ellen Loeffel, M.D., and Cyril M. MacBryde, M.D., St. Louis, obtained similar results in 44 women treated. They administered it by mouth.

ABSTRACTS AND DIGESTS

BRONCHIAL ASTHMA

The Use of Aminophylline Rectal Suppositories in the Treatment of Bronchial Asthma. Susan C. Dees. *J. Allergy*. 14:492 (September) 1943.

A rectal suppository containing 0.25 gm. aminophylline in cocoa butter, with 5 or 7 per cent wax, was used in fifty-five patients with severe and at times intractable asthma, due to combined intrinsic and extrinsic factors (forty-nine adults and six children). These had required frequent or continuous symptomatic relief; fifteen of them using epinephrine hydrochloride 1:1000 hypodermatically or epinephrine in oil intramuscularly several times a day.

It was effective in all but eight patients. Symptoms abated on an average of twenty minutes after administration and relief lasted for from four to twenty-four hours. The suppositories usually were given at bedtime and not oftener than every six hours during the day. Ordinarily, a suppository night and morning was sufficient. In some it restored the patient's ability to respond to the hypodermic administration of epinephrine hydrochloride.

The only ill effects were rectal burning in a patient with hemorrhoids, nausea in a patient six weeks' pregnant and laxation in two other patients. None showed any evidence of vascular reaction or gastric or intestinal irritation. The six children tolerated them without incident.

Comment: The intravenous administration of aminophylline for severe wheezing dyspnea must be given by one skilled in such therapeutics and often is obtainable only by hospitalized patients. Occasionally it induces cardiovascular reactions which are uncomfortable and sometimes alarming. To simplify the therapeutics for ambulatory cases, the drug has been found effective when administered rectally, dissolved in 30 cc. of water. For self-administration, it is still simpler to use the rectal suppository. The drug by other routes and other antispasmodics can be combined with its use. This route appears to obviate the occasional cardiovascular reactions following intravenous and the gastric discomfort following oral administration. The reported low incidence of rectal irritation makes it a useful method of therapeutics.

C. H. EYERMANN, M.D.

ULCERATIVE STOMATITIS

Potassium Chlorate in the Treatment of Ulcerative Stomatitis. John Zahorsky. *Arch. Pediat.* 60:438 (August) 1943.

The author expresses his disappointment that the Committee on Revision of the New Pharmacopeia saw fit to delete potassium chlorate from the official drugs, with the simple statement: "Potassium

Chlorate, an antiquated mouth astringent. Any internal use for it is not justified." He gives an extensive review of the clinical experiences of past masters of pediatrics who found that potassium chlorate in therapeutic doses was not toxic to the human body and that it had a specific effect on the cure of ulcerative stomatitis. Among others he quotes Meigs and Pepper: "The best internal remedy and indeed the only one of any kind that is necessary in most cases, is the chlorate of potash which possesses a stimulant and alter action on the mucous membranes. . . . We have used it now for many years past in a very large number of cases and seldom found it necessary to employ any other means. . . . The symptoms have begun to amend in every case in from three to four or five days and recovery has taken place in a week or a little more. The dose is from two or three grains every four hours for a child three years of age and four or five grains for one of nine or ten years. . . . Much discussion has taken place of late in regard to the injurious results of large doses of this salt administered to children, but we have certainly never seen any bad effects from its use continued for from a week to ten days, in the amounts above recommended."

This treatment was commended by all the older writers on the subject. However, the pharmacologists could not find anything to substantiate this clinical experience. The drug had no antiseptic value and as an oxidizing agent it was distinctly inferior to other chemicals. Only its extreme toxicity in large doses was stressed. Consequently, the recent graduates in medicine are afraid of the salt.

Recently, there has been a tendency to regard the disease as an avitaminosis and gratifying results have been reported from the use of various vitamins. However, as the disease is definitely contagious the treatment by local antiseptics continues. These are chiefly oxidizing agents, but other antiseptics seem to act just as well.

The etiology remains unsettled. Black, who made an etiologic study concludes that the "acute infectious gingivostomatitis is caused by the herpes simplex virus," and the Vincent's bacillus and spirocheta are only secondary invaders. The whole subject is still in the whirlpool of confusion. Recently, agricultural workers have demonstrated that sodium chlorate is a very powerful herbicide and it is on this property that its clinical effect may be explained.

Zahorsky at present uses the following treatment for ulcerative stomatitis: Once daily, in the office, a 1 per cent solution of gentian violet is applied to the lesions in the mouth. "For internal use, I prescribe 10 to 20 grains of potassium chlorate daily dose. The child will recover in a few days."

JOHN ZAHORSKY, M.D.

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NOVEMBER, 1943

EDITORIALS

BLUE CROSS SERVICE

The proposed State Medical Association group to make possible Group Hospital Service to members of the Missouri State Medical Association, who have not had a previous opportunity to secure this service, will not be accepted by Group Hospital Service, St. Louis. The lack of interest as evidenced by the small number of physicians who requested application blanks makes it inadvisable for the Blue Cross plan of St. Louis to accept the State Medical Association group.

MEDICINE AND THE PRESS

Relations between medicine and the press always have been bad or worse than bad. The doctor has felt, rightly or wrongly, that he would be crucified by the press if he so much as uttered a word. His statements would be exaggerated: "probable" would become "certain," and "improvement" would miraculously become transformed into "cure." Many poor souls would be led to believe that at long last there was hope for them, only to have this hope blasted when they went to see their physician. If the doctor's name appeared in the paper he was accused of advertising and self-advancement by his colleagues. The press, on the other hand, charged the medical profession with non-cooperation and with attempting to hide the facts. The threat of unfavorable publicity hung over the medic who was even willing to talk to the reporters. An excellent example of this attitude is the attack by several large metropolitan newspapers on the Surgeon General of the Army in connection with the jaundice following yellow fever vaccination. The members of the Medical Corps of the Army and Navy were doing everything possible to learn something of the cause and nature of the condition. Today the relation of the two is still not certain, yet fifteen months ago the office of the Sur-

geons General was accused in the newspapers of secrecy to cover their own mistakes.

As long as the medical profession and the press continued a private war, the public at large was not interested, but now the charge of exaggeration and varnishing of the news by the press comes from other quarters. It is stated that the facts of the war are not being reported accurately. Difficulties are glossed over and a difficult invasion is described as a picnic. One weekly magazine goes so far as to say, "The sum of their (soldiers') abrupt observations has been that they have lost faith in the veracity of U. S. radio and in the U. S. press." This is a sorry state for a truly great and necessary part of America.

A healthy fourth estate is an integral part of a democracy. The people of America deserve to be told how to prevent disease, and there is no group better prepared to tell them than the medical profession. But both medicine and the press must mend their ways. Medicine must be willing to release information on the cure and prevention of disease as rapidly as the facts are known. The press must give some visible expression of confidence in the medical profession and must observe scrupulously the important difference between proved facts and experimental presumptions. Together they can accomplish great things for the general welfare. All that is needed is the development of a technic of writing which combines the cold factual logic of science and the readable style of the newspaper.

"... SO RED THE ROSE ..."

Medicine should be a living, breathing sublimation of the highest, the noblest and the most altruistic tendencies of the human heart and mind.

Yet, today, the men who follow her paths are somewhat discredited and suspected by the public. To such a state has fallen this *lese majesty* that those of the highest tribunal in our land cautiously and studiously have avoided adjudging her as a profession. They have contented themselves in their decisions to consider her as a trade.

True, each individual physician may enumerate many persons who look to him as a combination of friend, guide, counselor and physician: all in one. Yet, considering the profession as a whole and its relationship with the general public, no matter how unsavory or unpalatable to us it may seem, the truth remains that we have suffered a decline in confidence and in trust.

The family physician of the past very largely was a man of modest circumstances and his technical training surmounted a background of close-to-earth labor, hopes and dreams. Recruited from this *stratum*, he could and did speak the common man's language through the lips of the learned, the oracular. He was respected for his training, for his ideals and for himself. He became "*all things to all men.*"

As time advanced, so did the requirements neces-

sary to further the skill and experience of those who practiced the healing art. The development of "specialists" became more extensive. The close feeling of "he could cut my head off, if he wanted to," was replaced by the impersonal, distant respect for "the specialist." This change was a natural but harmful public-relations accessory of more widespread specialization. A great number of men in the higher flights of medical life, the administrators of hospitals and the educators of young doctors, permitted and practiced aloofness. The cold, scientific attitude replaced the warm hand and understanding, compassionate smile of the family doctor. This "test-tube" attitude now declares dividends in lessened public fealty and faith.

No matter what specific example may be brought forth to illustrate the innumerable shortcomings of a medical man, since he is heir to all weaknesses of the flesh, there still remains the great composite body, which, in the aggregate, represents as ideal a band of devotees as the world has ever known.

With scarcely an exception no other group has dedicated itself to such monumental, unselfish and self-abnegative tasks as the prevention of the very condition upon which its livelihood depends. It is with pardonable pride that we may place ourselves alongside those who would rid the world of sin, and having succeeded, would thereby remove their own need.

Yet such ugly-headed rumors and suspicions arise as "doctors oppose this measure because they would not have so many cases, they would not make so much money," or "they are reactionaries, they oppose any change." All these and sundry other criticisms are readily dispelled by even a casual survey of the facts, past and present.

We are taught as medical individuals to be self-reliant, independent, self-sufficient, and to place the patients' interests above all else. We are taught to "be not the first . . . nor yet the last, . . ." in falling prey to every fad or fancy when dealing with the healing of precious lives. As individuals we may be soft-hearted, complacent, even lovable, or, because of our training, we may be considered arrogant, recalcitrant and uncooperative.

As every medical individual is the resultant of the tears, the love, the prayers, the hopes, the ideals, the dreams of his parents and of his own efforts, so are these qualities translated in terms of greater realities in that which we have received: the heritage of our profession. For all these finer attributes emanate from the acts of those who trod unknown paths before us.

It matters little our present predicament in our relationship with the public, except that we should recall this glorious legacy which is ours and this should spur us on in our unswerving duty to maintain it. Regardless of our present political and economic fortunes as individuals; regardless of these situations in our decade or two, or in those of our children, we are of something which is bigger and finer than all this temporary status of affairs.

Let our acts keep her on a high plane and unsullied so that our profession may progress no matter the temporary reverses—for she has done so through these many centuries. How worthy and deserving of our supreme effort to see that she is cherished, that she receive a moiety of impetus from us, that she is sustained by our generation.

It is only thus that the exquisite structure which has reached our hands could have been achieved; it was this concept which prompted the Tent-Maker to say of another thing beautiful:

" . . . that never blows so red

The rose as where some buried Caesar bled!"

VINCENT T. WILLIAMS, M.D.

NEWS NOTES

The City of Butler has purchased the Butler Memorial Hospital and it will be operated by a board of trustees beginning November 1.

Drs. F. J. Tainter and C. P. Dyer, St. Louis, and W. F. Francka, Hannibal, were elected directors from Missouri for the Mississippi Valley Medical Society in Quincy, Illinois, September 30.

Dr. C. C. Little, Bar Harbor, Maine, will deliver the annual Barnard lecture at the St. Louis Medical Society on November 16. His subject will be "Influence of Heredity in Human Cancer."

A free diagnostic clinic for crippled children was held at the Bothwell Memorial Hospital, Sedalia, September 27, from 8:30 a. m. to 2:00 p. m. Dr. Robert Schaffler, Kansas City, was the examining orthopedist.

McMillan Hospital, St. Louis, a fourteen story unit of the Barnes Hospital group which was erected twelve years ago but only partly finished and equipped, was opened for patients during October. The hospital has a 160 bed capacity.

Dr. Arthur W. Proetz, St. Louis, will speak at the first annual meeting of the American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, Inc., to be held in New York, November 12. His subject will be "Physiology of the Nose."

The St. Louis Medical Society presented certificates marking fifty years of service in medicine at a meeting of the society on October 5 to Drs. Adelheid C. Bedal, Arthur H. Bradley, W. Antoine Hall, W. Jackson Miller, Joseph J. Meredith, Ferdinand O. Sturhahn, Joseph M. Trigg, Henry R. Barton, Harry S. Crossen, Clarence M. Nicholson, Vilray P. Blair, Frederick P. Parker and Orril L. Suggett.

Dr. J. G. Bruce, Jefferson City, was elected chief of staff of St. Mary's Hospital, Jefferson City, at a meeting September 22. Dr. Joseph Summers, Jr., was elected vice president; Dr. H. B. Stauffer, secretary and treasurer, and Drs. R. P. Dorris, M. R. Aldridge and F. W. Gillham, members of the executive board.

The St. Louis Society for the Blind in cooperation with the National Society for the Prevention of Blindness and the Association for Research in Ophthalmology gave a dinner in St. Louis, October 14, in honor of Dr. Walter B. Lancaster, Boston, Massachusetts, on the occasion of the award of the Leslie Dana Medal for the Prevention of Blindness.

DEATHS

Blakesley, Theodore S., M.D., Kansas City, a graduate of Rush Medical College, 1902; member of the Jackson County Medical Society; Fellow of the American Medical Association; aged 65; died July 14.

Narr, Frederick C., M.D., Kansas City, a graduate of the University of Pennsylvania School of Medicine, 1923; member of the Jackson County Medical Society; Fellow of the American Medical Association; aged 55; died September 2.

Sevier, Robert E., M.D., Liberty, a graduate of the University Medical College of Kansas City, 1880; honor member of the Clay County Medical Society; aged 83; died September 4.

Bohling, Cord, M.D., Sedalia, a graduate of the Missouri Medical College, St. Louis, 1888; member of the Pettis County Medical Society; Fellow of the American Medical Association; aged 80; died September 11.

Hensley, Oliver E., M.D., Herculaneum, a graduate of St. Louis University School of Medicine, 1903; member of the Jefferson County Medical Society; Fellow of the American Medical Association; aged 69; died September 15.

Rodes, Ned R., M.D., Mexico, a graduate of the Missouri Medical College, St. Louis, 1893; member of the Audrain County Medical Society; aged 75; died September 18.

McGrath, John Newton, M.D., St. Louis, a graduate of St. Louis University School of Medicine, 1920; a member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 48; died September 21.

INCIDENTALLY

FROM THE EXECUTIVE SECRETARY

It would be interesting to know how many physicians in Missouri have written their Congressmen expressing opposition to the medical and hospitalization provisions of Senate Bill 1161, the Wagner-Murray-Dingell bill.—It might be revealing to know if the patients of physicians have written any similar letters.—Will not the Missouri Congressmen know better how to vote on this bill if their constituents make known directly and personally their

opposition?—The private practice of medicine is at stake.

The list of the Missouri members in Congress is as follows:

U. S. SENATORS

Bennett Champ Clark (D), St. Louis County.
Harry S. Truman (D), Independence.

REPRESENTATIVES IN CONGRESS

District

1. Wat Arnold (R), Kirksville.
2. Max Schwabe (R), Columbia.
3. William C. Cole (R), St. Joseph.
4. Charles Jasper Bell (D), Lee's Summit.
5. Roger C. Slaughter (D), Kansas City.
6. Marion T. Bennett (R), Springfield.
7. Dewey Short (R), Galena.
8. William P. Elmer (R), Salem.
9. Clarence Cannon (D), Elsberry.
10. Orville Zimmerman (D), Kennett.
11. Louis E. Miller (R), St. Louis.
12. Walter C. Ploeser (R), St. Louis.
13. John J. Cochran (D), St. Louis.

Senators may be addressed at Senate Office Building, Washington, D. C.

Congressmen may be addressed at House of Representatives Office Building, Washington, D. C.

COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

ASSOCIATE EDITORS: COUNCILORS OF THE TEN COUNCILOR DISTRICTS

FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR

The Nodaway-Atchison-Gentry-Worth Counties Medical Society

Dr. Pren J. Ross, Grant City, President, presided at a dinner meeting of the Nodaway-Atchison-Gentry-Worth Counties Medical Society at the Linville Hotel, Maryville, October 4. Members present were Drs. Charles T. Bell, Hiram Day, Leslie E. Dean, W. R. Jackson, Robert C. Person and William M. Wallis, Jr., Maryville; Charles W. Kirk, Hopkins; Eugene Crowson, Pickering; Charles D. Humbert, Barnard; Henry C. Bauman, Fairfax; Claude D. Haskell, Tarkio; Samuel E. Simpson, Stanberry; Pren J. Ross, Grant City. Dr. Herman F. Johnson, Omaha, was the society's guest.

With the usual and routine business matters finished, Dr. Johnson, who is Associate Professor of Orthopedic Surgery in the University of Nebraska School of Medicine, gave a thorough discussion of "Injuries About the Elbow Joint and Their Complications." His discourse, which was illustrated by lantern slides of skiagraphs and photographs, brought much eminently practicable material on dislocations, various simple and compound fractures, condylar, radial head and olecranon, gunshot wounds and crushing and "side-swipe" injuries. He is a proponent of immobilization in extension for many of the most common elbow injuries and favors late

passive exercises over the usual "bucket of sand" in the restoration of function. He touched upon nonunion and gave some much appreciated discussion as to his wide experience with grafts and various pins and screws. He answered numerous questions from his audience concerning gun-stock deformities and the newer ideas of the "increased carrying angle" of old fractures of the external epicondyle.

Following his lecture Dr. Johnson gave an interesting demonstration with his crinoline base splints, cotton-flannel bandages, table-mat padding and "rotation" (supination) slings made of straps of unbleached muslin.

CHARLES D. HUMBERD, *Secretary.*

WOMAN'S AUXILIARY

Woman's Auxiliary to the American Medical Association

President, Mrs. Eben J. Carey, Wauwatosa, Wisconsin.
President-Elect, Mrs. David W. Thomas, Lock Haven, Pennsylvania.

Woman's Auxiliary to the Missouri State Medical Association

President, Mrs. R. C. Haynes, Marshall, Mo.
President-Elect, Mrs. J. B. McCubbin, Fulton, Mo.
Adviser, Dr. Herbert L. Mantz, Kansas City, Mo.

On Tuesday, September 28, 1943, the annual fall board meeting of the Woman's Auxiliary to the Missouri Medical Association was held at the Missouri Hotel, Jefferson City. After a delicious luncheon the meeting was called to order by Mrs. R. C. Haynes, president.

The president reported a hearty and gratifying response by the chairmen of the various committees and expressed a word of assurance that the plans for the year would be carried out efficiently and sincerely by the members of the Auxiliaries throughout her jurisdiction. An attendance of thirty-nine women from all parts of the state was an emblem of enthusiasm.

As hostesses the women of Cole County Auxiliary deserve a word of praise for their effort in making this a successful meeting.

BOOK REVIEWS

FLYING MEN AND MEDICINE—The Effects of Flying Upon the Human Body. By E. Osmun Barr, M.D., New York: Funk & Wagnalls Company. 1943. Price \$2.50.

Dr. Barr, who has had experience as a flight officer and instructor, has prepared a simple exposition of the effects of flying upon the human body. It is intended primarily for the youth interested in aviation as a career; it will be intelligible to any high school graduate.

B. Y. G.

RECONSTRUCTIVE SURGERY OF THE EYELIDS. By Wendell L. Hughes, M.D., F.A.C.S., Hempstead, New York. Illustrated. St. Louis: C. V. Mosby Company. 1943. Price \$4.00.

This book first appeared as a thesis for admission to the American Ophthalmological Society and deals with a subject the author is well qualified to present. The reviewer was fortunate in attending a course given by Hughes last year at the American Academy of Ophthal-

mology and Otolaryngology meeting and thus perhaps has a greater appreciation for the book.

The author presents in excellent detail his own method for constructing an entire lower lid. The method is sound—proven only too well by the really beautiful results. The reviewer enthusiastically urges a careful study of the procedure.

The first part of the book is given over to an interesting historical review. Case reports from the author's own files are added to illustrate up-to-date procedures for different types of lid repair. The book ends with a comprehensive bibliography of 451 references.

H. R. H.

THE MARCH OF MEDICINE. The New York Academy of Medicine Lectures to the Laity, 1942. New York: Columbia University Press. 1943. Price \$2.50.

Any effort to inform the layman of medical investigation and research will produce benefits recurring both to the public and to the profession. The current series of lectures, while not particularly distinguished, certainly serve this end. It is to be feared that much of their substance is too technical for the average reader. A notable exception occurs in the lecture by Professor A. J. Carlson. After all, however, few physicians have had the intimate acquaintance with the laboratory and clinical course of medicine afforded this distinguished investigator. Nor, unfortunately, have they had the educational experience of this great teacher.

B. Y. G.

THE PRINCIPLES AND PRACTICE OF INDUSTRIAL MEDICINE. Edited by Fred J. Wampler, M.D., Professor, Preventive and Industrial Medicine, Medical College of Virginia. Contributors: Otis L. Anderson, R. N. Anderson, Anna M. Baetjer, J. J. Bloomfield, J. A. Calhoun, J. M. Carlisle, George H. Cross, Donald E. Cumming, Charles F. Engel, John H. Foulger, Augustus Gibson, T. Lyle Hazlett, Albert Hemming, F. F. Heyroth, Joanna Johnson, R. T. Johnstone, Robert A. Kehoe, M. H. Kronenberg, B. E. Kuechle, Mathew Luckiesh, Willard Machle, R. W. McKee, Sarah I. Morris, Kenneth Morse, Frank K. Moss, C. M. Peterson, D. F. Robertson, F. S. Rossiter, William A. Sawyer, Louis Schwartz, Lorin A. Thompson, Fred J. Wampler, George Zur Williams. A William Wood Book. Baltimore: The Williams & Wilkins Company. 1943. Price \$6.00.

The appearance of a book on industrial medicine during the present national emergency is timely. The author and the contributors, not all physicians, are experienced in their special fields. Among the contributors are a sanitary engineer, a hygienist, a physiologist, an oculist, a dermatologist, a pathologist and several internists. The preventive side of industrial medicine is stressed as is early detection of the toxic effects of gases, fumes and metals, and clinical and laboratory methods for their early detection are outlined.

The industrial physician will be interested especially in the chapters on the effects of temperature and humidity on workers, fatigue, toxic chemicals, toxicity of certain solvents, carbon disulphide and carbon monoxide and industrial lead exposure or lead poisoning.

It seemed to the reviewer that the chapter on solvents might be elaborated upon. The chapter by Robert A. Kehoe, "Industrial Lead Exposure and Lead Poisoning," is excellent. There is a chapter on pneumoconiosis. The industrial back is discussed by Johnstone in his usual clear and informative manner.

The book is easily read and is well bound. I can recommend it to the practitioner of industrial medicine or to the students interested in industrial medicine.

C. W. M.

THE JOURNAL

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BLOOD TRANSFUSIONS AND BLOOD SUBSTITUTES

RAYMOND O. MUETHER, M.D.

ST. LOUIS

Having secured a suitable donor, it becomes necessary to decide what disposition to make of the blood which is about to be obtained. There are four possibilities.

(1) *Direct Transfusion of Blood.*—The first is the direct transfusion of blood from donor to recipient without the use of anticoagulants. Various methods have been proposed for this but most of them are difficult and, therefore, unsatisfactory. The advantages if any of the direct transfusions, are, in my opinion, not sufficiently great to warrant further discussion.

(2) *Use of Fresh Blood by the Indirect Method.*—In this instance, the blood usually is taken in an anticoagulant, such as sodium citrate, and immediately given to the recipient. This procedure is vastly simpler than the direct method but has the disadvantage that a suitable donor must be available at the time the blood is needed. It is necessary under such circumstances to type a number of prospective donors. When a suitable one has been found, serologic tests must be done to exclude syphilis. All of this is time consuming and expensive. It also ties up the laboratory personnel for long periods of time, usually at the most inconvenient moment. And since it is done during the excitement of an emergency, mistakes may occur.

(3) *Blood Stored for Short Period of Time.*—The blood may be stored for a short period of time in a refrigerator. The blood is taken in citrate, as previously, but the serologic test and typing are determined at the convenience of the laboratory technician. Suitable blood of the various types is always available and the serologic work can be done leisurely and without the pressure of an emergency.

All that is necessary when such blood is to be

given is to cross match a blood from the "bank" with the recipient, a procedure which can be done by the test tube method in five minutes. The chief disadvantage to this method is the short period of time that the blood can be stored. The blood can be given for only from six to eight days. Hemolysis takes place if blood is stored any longer and it is then not suitable for transfusion as whole blood. It can, however, be used for plasma as a rule.

(4) *The Blood May Be Preserved and Stored.*—Such blood has all the advantages of stored blood plus the very real advantage of a much longer storage period. Blood to be kept in this way should be taken in a fairly large volume of isotonic dextrose and citrate. DeGowin has devised such a formula. I prefer a modification of DeGowin's formula; namely, a dextrose, citrate buffer solution. Thirteen cc. of this solution is used for each 10 cc. of blood to be taken. Such blood will keep and may be administered to patients for from twenty-one to thirty days. If after this length of time the blood has not been utilized, it can be converted into plasma. The only disadvantage, which has been suggested concerning this method, is the factor of dilution. This is not, however, a real disadvantage for it is almost invariably true that when blood is to be given volume is essential. In anemia, in which one is interested primarily in increasing the erythrocyte count, the administration of the erythrocytes will be the same in the end whether they are given concentrated or diluted. If given diluted, the excess fluid soon is eliminated by the kidneys while the cells remain in the blood. In shock, hemorrhage and numerous other conditions, it may be actually advantageous to give the blood in a diluted form.

Whatever the method or the procedure used, the administration of whole blood requires great care in handling to prevent contamination, as well as careful blood grouping and cross matching to prevent reactions due to incompatibility. Unfortunately, this subject cannot be considered in detail, but it is necessary to point out that a potent typing sera is absolutely essential and that to determine the potency of the sera the titer must be determined.

This procedure must be followed whether the sera has been prepared in the hospital laboratory or has been purchased. A serum in order to be satisfactory should be capable of agglutinating suitable cells in a dilution of at least 1:100. Such a sera will detect cells which are weak in agglutinogens. Cold agglutinins and the Rh agglutinins are also important in blood grouping and must be borne in mind. Speed with accuracy is essential in the transfusion laboratory, and so the potent sera plus the test tube centrifugation method for typing is most desirable.

Blood substitutes at the present time, for the most part, mean blood plasma. Acasia, pectin, gelatin and isinglass have not proved entirely satisfactory. The concentrated albumin fraction is not generally available and little is known about it. From a theoretical standpoint, it has much to recommend it. Plasma may be made directly from fresh citrated or heparinized blood, or it may be obtained from stored or preserved blood. Plasma may be separated from the cells by centrifugation or by sedimentation. Of the two methods sedimentation is much to be preferred, both from the standpoint of cost and ease of production. Regardless of the procedure employed, however, the plasma must be aspirated from the blood aseptically and pooled in larger containers. In ordinary clinical work the plasma of from eight to ten bloods should be pooled. The types should be mixed well. The pool must be cultured and tested for pyrogens and toxicity before it is finally aspirated into the dispensing flasks. The plasma so obtained can be stored at room temperature, or in a refrigerator at from 5 to 8 C. If equipment is available, the plasma can be frozen or dried. Drying is a costly process and there are a variety of ways of accomplishing the drying. In routine clinical or hospital work there seems to me to be no worth-while advantage to dried or for that matter frozen plasma. If the physician wished to carry plasma with him routinely, dried plasma would be very suitable. Dried plasma may be of value in very small institutions which do not have access to other plasma, but I must confess I find it hard to visualize a set-up which would not permit the development of at least a small plasma bank.

The advantages claimed for frozen plasma are that the complement and prothrombin keep very well and that the growth of bacteria is inhibited; dried plasma has the same advantages, of course. Neither of these advantages seem to be particularly important. Complement is very seldom if ever needed by a patient, prothrombin deficiencies for the most part can best be met by administering vitamin K. Contamination and bacteria should not be present in the plasma and suitable controls should be followed to insure sterility of the product. It is perfectly possible in my opinion for every hospital, regardless of size, to have a blood and plasma bank.

634 N. Grand Blvd.

PULMONARY LESIONS OF SULFONAMIDE

HENRY PINKERTON, M.D.

ST. LOUIS

Every new therapeutic agent introduced for the treatment of disease is apt to bring with it new types of pathologic change. This relation to pathologic changes has been striking in connection with the introduction of the sulfonamide drugs. Although the picture of the pathologic changes that may be seen in individuals who have been given these drugs is just beginning to be formulated, a variety of conditions have been demonstrated. The most familiar of these probably are the various renal complications which may occur: the formation of concretions in the kidney pelvis and also the development of complete anuria and the suppression of urination, which may or may not be due to actual obstruction from concretions in the kidneys. In some cases one finds complete anuria although urinary tract, pelvis and ureters are patent. In addition to this, a considerable number of blood dyscrasias have been described, including aplastic anemia, agranulocytosis and purpura hemorrhagica. French and Weiler report that there occurs in something like 50 per cent of cases a peculiar type of myocarditis in patients who have been given the sulfa drugs. Hepatitis followed by jaundice is another type of lesion produced by the sulfa drugs and recently Rich has made a direct contribution to the subject by describing a vascular lesion similar to that seen in periarteritis nodosa in patients who had been given sulfa drugs and showed evidence of hypersensitiveness to these drugs. There is a growing concept that these lesions are due primarily to sensitiveness of the individual to these drugs. In other words, these are the hypersensitive, allergic type of reaction. This, of course, is not true of mechanical blockage of the kidneys by concretions but it does seem to be true in other types of lesions I have described.

There is a great variation in the individual response to these drugs. I mean to say that individuals who get agranulocytosis usually do not have hepatitis or jaundice and this fits in well with the idea that it is primarily a hypersensitive type of reaction because in experimental animals, if one makes a number of animals hypersensitive and thus produces a severe reaction, one finds some animals will have one type of reaction and others another.

Although it may be somewhat premature to discuss the pulmonary complications of sulfa drug therapy, I wish to present one fatal case of sulfathiazole poisoning in which I feel reasonably sure that pulmonary death was caused by sulfa drug administration. The case was that of a 24 year old male who had been treated in the routine way with sulfathiazole for gonococcal infection. This patient developed evidence of severe allergic reaction. He had a generalized erythematous skin condition,

Presented at the 86th Annual Session of the Missouri State Medical Association, St. Louis, April 18, 19, 20, 1943.

marked photophobia, conjunctivitis, renal suppression and a nonprotein nitrogen of 124. He also developed, some time before death, rapid respiration and evidence of pulmonary involvement. This was diagnosed clinically as some type of virus pneumonia and the roentgen ray showed what was thought to be a virus pneumonia or pulmonary edema of a severe type. The case terminated fatally in about three days. At autopsy a marked necrosis of tubular epithelium was found, undoubtedly caused by the sulfa drug administration, and this was responsible for the anuria. There was also a myocarditis similar to that described by French and Weiler and diffuse focal necroses which were similar to those described by other workers. The condition of the lungs was particularly interesting. The lungs showed marked edema and a great deal of fluid was expressed from the cut surface. The lungs weighed 1,020 and 1,850 grams. There was fluid exudate in the alveoli and in places this appeared to be of a gelatinous nature. There were few cells in the alveoli and bronchioles and there was no evidence on microscopic examination of this being an infectious type of pneumonia. The most striking feature, perhaps, was a wide hyaline membrane surrounding about 50 per cent of the alveolar wall similar to that which Dr. Moore described in the cases of so-called virus pneumonia. The microscopic picture resembled virus pneumonia in a rather striking way, the main difference perhaps being that the cells contained a high percentage of neutrophils, while in virus pneumonia the cells are almost entirely of the mononuclear variety. The reasons for not regarding this as an infectious type of pneumonia were the absence of bacteria, as far as they could be demonstrated by staining methods, and also the fact that the lesions started after the individual manifested generalized reaction to the sulfa drugs. The occurrence of this type of lesion in an individual showing other evidence of sulfa drug poisoning is of particular interest in connection with the idea that the sulfa drug lesions are to a large extent on the allergic basis. As I have already pointed out, the original thinking was to explain this on an allergic basis and I was very much interested to find that the blood dyscrasias, aplastic anemia, agranulocytosis and purpura hemorrhagica not infrequently are found in allergic animals. Cannon has experimented with animals which are sensitized to egg white and then egg white is introduced into the lung and a tremendous inflammatory reaction occurs in the lung; whereas, in normal animals the egg white causes little or no inflammatory reaction.

On the whole, then, I think there is good evidence for believing that this peculiar pulmonary lesion, which, as I have said, greatly resembles a virus pneumonia, was in this case an allergic reaction to the sulfa drugs, although I must admit that to draw a conclusion from a single case is dangerous. However, the picture fits in well with the allergic type of reaction and, if this is true, obviously one must be very cautious in making a diagnosis of atypical or virus pneumonia in individuals who

have been given sulfa drugs, particularly if there is evidence in the individual of a hypersensitive type of reaction.

St. Louis University School of Medicine.

DISCUSSION

M. PINSON NEAL, M.D., Columbia: This is a questionable subject about which there is much confusion, but when one deals with a pneumonia lesion of this character it is well recognized that it is more than a matter of etiology. It is dangerous to label it virus pneumonia. I have seen one or two cases that somewhat resembled Dr. Pinkerton's in which I questioned the propriety of giving the sulfa drugs. In the last two weeks I had a patient, a child 6 months old, who was sensitive to sulfathiazole; he had a violent pneumonitis almost identical with Dr. Pinkerton's case. I have felt one should consider chemical poisoning in these cases, but what the relation is I do not know. Lately, I have been calling the attention of the laboratory to the sensitiveness of the patients who are given one of the sulfa drugs as it does not add any proof to run a bacteriologic series and find the pneumococcal type because it is difficult to differentiate between streptococci and pneumococci and the laboratory test cannot be done with any degree of accuracy.

CAPT. R. R. WOLCOTT, United States Public Health Service: I would like to ask Dr. Pinkerton in regard to the relationship of the toxic manifestations. In the case history as given he said a 24 year old man was given routine sulfathiazole therapy. Did that individual receive 20 grams of sulfathiazole, more or less? Did he receive 20 grams and the toxic symptoms develop later, or did the toxic symptoms show themselves on the second, third or fourth day of treatment?

HENRY PINKERTON, M.D.: I do not recall the dosage in this particular case, but I can say this, that one of the striking things is that the reactions occur in patients who have been given relatively small doses, say one quarter of the normal dose. I think this is one very definite fact and it goes well with the idea that they are primarily sensitization reactions. Another point is that an individual who has once had a reaction is often found to have a similar reaction if the drug is given a second time several months later. There has been some literature in the *Journal of the American Medical Association* the last three or four months discussing the possibility of skin testing the individuals first for the possibility of sensitization. I am not sure just how successful this has been but it would seem to be an ideal way of solving the problem if it were possible to determine in advance which individuals would manifest these toxic reactions.

MEDICAL EDUCATION AND LICENSURE

The Annual Congress on Medical Education and Licensure, under the auspices of the American Medical Association's Council on Medical Education and Hospitals, will be held February 14 and 15, 1944, in the Palmer House, Chicago, *The Journal of the Association* announces in its November 20 issue.

THE CORONER PLAN AND THE MEDICAL EXAMINER SYSTEM

A BRIEF COMPARATIVE SURVEY OF STATUTORY PROVISIONS IN ENGLAND AND SEVERAL AMERICAN STATES

HERBERT S. BREYFOGLE, M.D.

ST. LOUIS

THE CORONER PLAN; HISTORICAL

There are few facts regarding the ancient office of the coroner before 1275 A.D. During the reign of Henry I (1100-1135) the right to elect a coroner was granted to the citizens of London. In 1194 the justices of the eyre were directed to see that three knights and a clerk were elected to keep the pleas of the crown.¹ The coroner is mentioned in the Magna Carta (1215). In the reign of Henry III (1216-1272) justices were empowered to appoint "coronators"² to hold inquests on dead bodies.

In 1275 the Statute of Westminster I provided a series of regulatory acts governing the powers and duties of coroners and specified that the coroner was to hold inquests on drowned, slain or wounded persons or persons suddenly dead; on treasure-trove and where "houses are broken." Although there were additional statutes enacted after 1275 concerning the selection and qualifications of coroners and the payment of fees to them, no total revision of the laws was made until 1887. In 1892 and again in 1925 new Coroner's Acts were provided.

In ancient England the coroner was appointed for life, either by the king or by the county justices, and was therefore an important and powerful honorary crown official in the various counties as were the sheriffs and justices. He was, in effect, a justice who, assisted by a jury, held small courts of inquiry and record in the interests of the crown upon cases of wreckage, treasure and fires, as well as in instances of death by violence or unknown causes. He could compel the attendance of witnesses, perform arrests, commit persons for trial and act for the sheriff in the latter's absence. The coroner was required to be a person of the degree of a knight and to hold proper estate. In 1354, however, this was no longer required. By the Coroner's Act of 1887 this officer was to be a "fit person, having land in fee sufficient." Gradual changes in the office finally altered its original honorary character to that of a paid public service.

The coroner, even as early as the 12th century, was elected by the freeholders of the county. There were, however, certain districts in which a coroner

was either appointed by the crown or by lords holding charter from the crown (franchise coroners). Most of these were abolished by the Coroner's Act of 1926. As a result of the Local Government Act of 1888 the coroner ceased to be an elected official and after that date was appointed by the various local county or borough councils. He remained, however, an officer of the crown and not of the corporation.

The office of coroner is perhaps best known today in Great Britain and the United States. Transplanted to America, the early English settlers quickly adopted a form of local self-government that was familiar to them. They made provision for county courts and the election of sheriffs, coroners and justices of the peace just as in England.

In early France and Germany such duties as were required of coroners in England were similarly magisterial but were carried out by minor officials of the local courts. Later such duties were taken over by the police and, eventually, there were created medicolegal institutes to assist the police in their investigations.³

Thus, in modern times the office of coroner has retained its judiciary associations both in England and the United States but on the continent of Europe has become allied more firmly with the police. Recent changes in a few states in America have shown a tendency to adopt the latter arrangement.

THE CORONER IN ENGLAND

The coroner in England at the present time is appointed by the council of the borough or county but is an officer of the crown rather than of the corporation. He is appointed for life but may be removed from office for specific or for discretionary reasons. The coroner must be a barrister, solicitor or legally qualified medical practitioner of not less than five years' standing in his profession. Certain high justices retain the title of supreme or sovereign coroners. Most of the franchise coronerships have been abolished. There still exists the office of King's coroner (essentially a custodian of records) and the Coroner of the King's Household.

The duties of the coroner require that he inquire of the cause of death upon a view of the body, order a postmortem examination (if deemed necessary), inquire of the cause of fires in the city of London, and of the nature of treasure-trove, act as conservator of the king's peace, serve in the place of the sheriff in the latter's absence and perform certain duties in respect to outlawry.

The statutes provide that he conduct an inquest into deaths occurring from murder, manslaughter, infanticide, accident, poisoning, suddenly from unknown cause, violence, unnaturally in prisons, or under circumstances the recurrence of which would be prejudicial to the public health or safety. The

Deputy Coroner, St. Louis County; Pathologist to St. Louis County Hospital; Instructor in Pathology, Washington University School of Medicine; Lecturer in Legal Medicine, St. Louis University School of Medicine.

1. To conduct suits in the name of the crown.

2. Origin of the term "Coroner": The provisions of the early statutes of the English common law relating to a crown officer referred to him as "keeper (or guardian) of the pleas of the crown" (*custos placitorum coronae*). Since the Latin term for crown is *corona*, the word for crown officer should properly be *coronarius* but the Latin ending *-arius* was at an early date confused with the verbal form *coronare*, to crown and with *coronator*, crowner. Various modifications of the term may be seen in the statutes before 1887: *coroner*, *corowners*, *crowmare*, *crowner*, *coronarios*, *coronator*.

3. "Just prior to 1300 A.D. the law school at Bologna prevailed upon doctors to open dead bodies in order to determine the cause of death in medicolegal cases." Dr. Hubert W. Smith, address before the New England Pathological Society, March 19, 1942.

coroner is required by law to hold an inquest in the case of certain deaths but in other instances he may order a postmortem examination in order to determine whether an inquisition before a jury will be necessary.

He is subject to penalty for failure to summon medical evidence. The law permits the coroner to avail himself in general of expert scientific opinion and information. The inquest is to be a public hearing and counsel may represent the accused, but the coroner may order it to be private. The coroner may compel the attendance of witnesses and institute contempt proceedings. He is immune from arrest and from serving on juries. Certain deaths must be reported to the coroner by the registrar of deaths. In case the jury cannot unanimously agree as to the cause of death, the coroner may accept the majority opinion.

Comment.—The most conspicuous features of the English law are that the coroner must be a member of either the legal or medical profession and is no longer elected by the people. His judicial functions since 1275 have not been altered materially, although the importance of the office in the judiciary branch of the government has declined. The coroner remains a crown officer and conservator of the king's peace, retains some ministerial duties and enjoys certain privileges and immunities. He has been granted certain discretionary powers but specified restrictions have been provided to prevent an excess of duty. Problems requiring his jurisdiction have been stated clearly and the manner in which he is to conduct his inquiry is covered by statute. The coroner is assigned certain responsibilities to the government and in turn other officers are responsible to him. Thus, the coroner in England is a judge, magistrate and minister.

THE CORONER IN MISSOURI

The coroner of Missouri is elected by the people for a limited term of office and cannot succeed himself. There are no especial qualifications required of the candidate for coroner.

He is a constitutional officer of the state but his office is not included in the enumerated tribunals of the constitution.

The duties of the office require that the coroner "take inquests of violence and casual deaths . . . and where the body of any person coming to his death shall be discovered"; serve and execute writs; summon a jury; administer oaths; perform the duties of sheriff when necessary, and act as conservator of the peace. He may order a postmortem examination to be conducted as a part of the inquest and at the request of the jury order that a chemical analysis and microscopic examination be done. He may compel the attendance of witnesses and bury unclaimed bodies. The coroner may hold an inquest at the request of relatives or friends of the decedent. If a credible person declares under oath that death resulted from violence or a criminal act, the coroner need not summon a jury.

The coroner may be removed from office for failure to give bond or for conviction of a misdemeanor or felony.

The coroner's verdict is given in writing by the jury and signed by the coroner. He is immune from jury service and exempt from working on roads.

Comment.—The coroner's office has been subject to laws enacted in 1807, 1843, 1847, 1868, 1873 and 1887. The coroner of Missouri is elected by the people and holds office for a limited term; he may be a physician but the law does not require it. The functions of the office are judicial, magisterial and ministerial but it is agreed generally that the judicial duties are restricted to a decision regarding whether or not an inquest shall be held. It is clear from the statutes that the jury must agree on a verdict; the coroner merely attaches his name to it. The limits of his jurisdiction are narrow and he is not granted any discretionary powers. Legal opinion holds that an autopsy may be performed only as an integral part of the inquest and therefore cannot be carried out to determine whether or not an inquest is required.

The disposal of unclaimed bodies is now subject in part to action by the Anatomical Board of Missouri. It has been ruled that the inquest is not a part of the criminal prosecution and the sheriff is not required to attend the inquest. The coroner may sign a death certificate in cases of death without medical care only when they are referred to him by the registrar of deaths as such and when death may have been caused by suspicious or unlawful means. By statute, however, the registrar may certify cases of sudden death from unknown cause by simple inquiry of relatives and friends without consulting the coroner. Finally, there are a large number of deaths which reasonably might be subject to investigation for reasons of public health or safety for which there is no provision in any of the Missouri statutes.

THE CORONER IN OHIO

The coroner laws of Ohio are somewhat similar to those of Missouri except in counties having a population of 400,000 or more, the coroner may appoint a licensed physician of good standing in his profession and who shall also be a pathologist to "assist in doing autopsies and making such pathological and chemical examinations . . . as may be required and directed by the county coroner or recommended by the county prosecuting attorney." An autopsy may be performed if "death is supposed to have been caused by unlawful or suspicious means," or if authorized by the prosecuting attorney.

Comment.—Provisions of this type have been made in a few other states. They do not alter the character of the coroner's office essentially but provide him with expert medical assistance. In Ohio, at least, the discretionary powers of the coroner have been transferred to the office of the prosecuting attorney.

THE MEDICAL EXAMINER SYSTEM; HISTORICAL

The first change in the office of coroner in America was made in 1877 when the Commonwealth of Massachusetts dropped the title of coroner and created the title of medical examiner. The magisterial duties of the coroner were transferred to the district court and all inquests were held by it, the medical examiner presenting his testimony as a witness at the inquest. Somewhat similar changes were made subsequently in New York City in 1915, later (1927) in Essex County, New Jersey, and most recently (1939) in the State of Maryland. The tendency has been, in making such changes, to abolish the coroner as a constitutional officer, transferring these duties to already constituted judiciary authorities, and to provide for the appointment of a medical practitioner by statute. The earliest change in the law stipulated that the examiner be an able practitioner of medicine; more recent changes require that he be a pathologist.

THE MEDICAL EXAMINER IN MASSACHUSETTS

The law permits the appointment of medical examiners and associate medical examiners in each county for a term of seven years by the governor with the advice and consent of the governor's council. The appointees must be "able and discreet men, learned in the science of medicine." Special provisions are made for Suffolk County which comprises the City of Boston.

The medical examiners are required to view, examine, make personal inquiry of the cause of death, and take charge of the bodies of persons supposed to have died of violence. If the examiner considers that further examination is necessary he must so advise the district attorney. If the latter concurs, he may authorize the examiner to perform an autopsy, and shall certify to the county commissioners that an autopsy was necessary. The statutes also specify that "upon written order of the district attorney . . . a medical examiner may also make an autopsy . . . of any dead body within his county." The examiner is given discretionary powers to employ a chemist to aid in the examination.

In the event that a dead body is to be cremated, the examiner also must view the body and make inquiry concerning the death.

If the conclusions of the medical examiner indicate that the death of any person was caused by the "act or negligence of another" he is directed to notify the district attorney and a justice of the district court or a trial justice and to file with them a record of his findings. The court or the justice may then hold an inquest. The district attorney, however, may order an inquest in the case of any death from external means.

Comment.—There are several notable features of these laws. The office of coroner throughout the state is abolished in title and in function. The inquest is held in an established tribunal or by a trial

justice. The responsibility of the medical examiner is entirely medical and he appears at the inquest as a witness to provide information for law enforcement agencies. The appointments made by the governor, in the majority of instances, have comprised leading physicians in the community; in the City of Boston the appointees have been qualified pathologists. In general new appointments have been made only by reason of age, resignation or death of the incumbent examiner.

Since 1938 the state police of Massachusetts have provided the district examiners outside of Boston with the consultant services of the department of legal medicine of the Harvard Medical School. This places at the disposal of any medical examiner or district attorney the combined services of a forensic pathologist, toxicologist, ballistics expert, photographers, finger-print experts, and other investigators.⁴

Such a service had already been in operation in the City of Boston before 1938. Since 1941 the department of mental health of Massachusetts has employed a forensic pathologist to cooperate with medical examiners in cases of suspicious, obscure or violent deaths occurring in state hospitals.

THE MEDICAL EXAMINER IN NEW YORK

In 1894 the coroner ceased to be a constitutional officer in the State of New York. The laws of 1897 in effect abolished the county coroner. Certain laws enacted in 1915 absolutely did away with the office of coroner in New York City and his duties were transferred in part to the county clerk. The medical functions were given to the office of the medical examiner. According to a series of laws enacted in 1936 any county not wholly within a city might adopt a county charter which contained provisions for a county medical examiner and abolished the office of coroner. The alternative county plan and the system in operation in New York City at the present time are essentially the same. The mayor or county executive appoints a chief medical examiner from the classified civil service list. The appointee must be a qualified practitioner of medicine and surgery, with five years of experience in the practice of his profession, and a skilled pathologist. The chief examiner appoints the deputies and other assistants. The deputy examiners must possess the same qualifications as the chief.

The law provides that the office of medical examiner shall investigate the facts and circumstances of the death and take charge of the body of any person who shall die from criminal violence, criminal neglect, casualty, suicide, in prison, suddenly in apparent health, in any suspicious and unusual manner or when unattended by a physician.

If an autopsy is considered necessary by the ex-

4. Since 1938 the Harvard Medical School with the aid of the Rockefeller Foundation has utilized this service in sponsoring postgraduate training in legal medicine. District medical examiners are invited to attend annual seminars held in Boston under the combined sponsorship of the department of legal medicine, the state police and the medical examiners of Suffolk County.

aminer it shall be performed by the chief or deputy examiner.

Comment.—Although the coroner is no longer a constitutional officer he is retained throughout the state unless optional plans of city or county government are adopted. Under the optional plans the medical examiner is relieved of all duties required of the coroner except for the medical functions and provided with discretionary powers as well as with a comprehensive list of the type of deaths to be investigated. New York was the first of the states utilizing this plan to require that its examiners be not only physicians but pathologists as well. In contrast with other states the chief examiner selects his own deputies and assistants.

The medical examiner plan has been in operation in New York City since 1915. There have been only two chief medical examiners during that time. Much of the medicolegal work of the office is well known and requires no comment here. In recent years arrangements have been made for postgraduate training in forensic pathology and allied departments under university sponsorship.

THE MEDICAL EXAMINER IN NEW JERSEY

The law provides that any county of the first class (population exceeding 500,000) may create by resolution of its board of freeholders the office of county chief medical examiner, and for that office shall select a licensed doctor of medicine of recognized ability and good standing.

Toxicologists or other scientific experts may be appointed by the board upon recommendation by the chief medical examiner.

The duties of the medical examiner are as follows: "When, in the county, any person shall die as the result of violence, or by casualty or suicide, or suddenly when in apparent health, or when unattended by a physician, or within twenty-four hours after admission to a hospital or institution, or in prison, or in a suspicious or unusual manner, or under any of the above circumstances in any institution located in the county, maintained in whole or in part at the expense of the state or county, the police department of the municipality in which he died, or the superintendent or medical director of the institution in which he died, or the physician called in attendance shall immediately notify the office of the chief medical examiner of the known facts concerning the time, place, manner and circumstances of the death. Immediately upon receipt of such notification the chief medical examiner or an assistant medical examiner shall fully investigate the essential facts concerning the death. If necessary he shall go to the dead body and take charge. . . . If, in the opinion of the medical examiner, an autopsy is necessary it shall be performed by the chief or an assistant medical examiner." The powers of the coroner are vested in the chief medical examiner but a jury of inquisition is unnecessary.

Comment.—At the present time the provisions

of these statutes are effective only in Essex County. The state retains the coroner as a constitutional officer in all of the remaining counties. The coroner is elected without special qualification requirements. According to statutory stipulations he must conduct inquests on deaths occurring in prison, suddenly, violently, by casualty or from unknown cause. He may appoint a physician to perform an autopsy if it is deemed necessary. However, certain statutes also specify that counties elect a county physician who is to inquire of the same types of deaths as the coroner but primarily for the purpose of determining whether an inquest is necessary. If, according to the statutes, an inquest is necessary, the county physician notifies the coroner and the coroner must then summon a jury. Thus, New Jersey retains the coroner as a constitutional officer with minor judicial, magisterial and ministerial duties, and in some instances either replaces him with a medical examiner or deprives him of certain judicial or magisterial duties.

The provisions of the medical examiner law are worth noting because of the comprehensive manner in which deaths deserving medicolegal investigation are covered and the discretionary powers granted. While the chief judicial function of the coroner is withdrawn from the medical examiner he retains certain magisterial and ministerial duties. Although the state is no larger than Maryland (see following) it has not adopted a state-wide organization with a central headquarters in its largest city.

THE MEDICAL EXAMINER IN MARYLAND

The statutes of Maryland provide for the creation of a department of postmortem examiners which is to be a commission of five men named by title, serving without compensation.

The commission is to appoint three medical examiners for the state and deputy examiners for each county. The three state examiners must be licensed physicians with at least two years training in pathology. The deputies are appointed from a list of licensed physicians submitted by local medical societies.

The state examiners are to be given headquarters in the City of Baltimore with arrangements to use the laboratories and other equipment of the health and police departments.

The examiners are to take charge of the dead body and to investigate the facts concerning the medical causes of death when "any person shall die . . . as a result of violence, or by suicide, or by casualty, or suddenly when in apparent health or when unattended by a physician, or in any suspicious or unusual manner."

Autopsies are to be performed at the discretion of any of the examiners but when decided upon must be performed by one of the state examiners. The chief examiner, however, may designate competent pathologists to perform autopsies for deputy examiners.

The examiners are required to attend only to the medical functions formerly devolving upon coroners and are specifically denied the power to summon a jury of inquisition.

Comment.—The Maryland act is noteworthy in that for the first time in any state it establishes by law a central medicolegal organization with state-wide powers. In Massachusetts optional services are provided the various local examiners and to a certain extent these services are elective in Maryland. If, however, the deputy examiner regards an autopsy as necessary it must be performed by a member of the central office or by a competent pathologist designated by the chief examiner. This would permit the state examiner to bring into effect a variety of investigative services already provided him. The act, moreover, includes a comprehensive survey of cases to be investigated, grants broad discretionary powers, abolishes the inquest and transfers only the medical functions of the coroner to the examiners. The laws apply to all but one of the twenty-four counties of Maryland. The fact that there is but one large city in the state and the total area of the state itself is only 12,327 square miles with a population of 1,631,526 (1930) probably serves to make this an effective arrangement in Maryland. Massachusetts and New Jersey are comparable in certain respects.⁵

In a larger state, such as New York,⁶ with a higher percentage of urban population and several major cities, such an organization might prove difficult to administer on this basis. Missouri⁷ is comparable to New York in this regard.

SUMMARY

The general trend in the revision of laws pertaining to official investigation of medicolegal deaths is indicated by the example of England during the period of 1275 to 1926 and of a few states in America from 1877 to 1939. The basic features of such modification are as follow: (1) special qualification requirements for those persons responsible for the investigation, (2) appointment of these officials by executive order, or by constituted boards and commissions, (3) provisions for a longer tenure of office (five to seven years), or for life, or for an indefinite period, subject to termination only for incompetence, age or corrupt practices, (4) recognition that in the interests of public health and safety a large number of deaths require medical investigation before it becomes apparent that legal action by law enforcement agencies or health authorities is needed, (5) granting of broad discretionary powers to the official in charge in order that a complete and integrated investigation may be provided.

These revisions in England have not been associated with any alteration of the title of the office

of coroner; in Massachusetts, Maryland and in certain parts of New York and New Jersey such changes have been combined with a change in the title so that in these states official investigation of medicolegal deaths is conducted by the office of the medical examiner.

The coroner system and medical examiner system differ in the fact that (a) the non-medical duties of the coroner are transferred to the district court or trial justice, or to other officers already provided by law, and (b) the medical duties of the coroner are transferred to a physician or to a physician-pathologist.

In England the coroner is a magistrate (and may be a lawyer or a physician) who delegates his discretionary powers to such experts as are needed in the investigation and may be penalized for failure to summon scientific aid. The laws which are now in effect in certain counties in Ohio and New Jersey are somewhat similar in that medical assistance is provided by statute.

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CASE REPORTS OF THE BARNES HOSPITAL

CLINICAL AND POSTMORTEN RECORDS USED IN WEEKLY
CLINICOPATHOLOGIC CONFERENCES AT BARNES
HOSPITAL, ST. LOUIS

W. BARRY WOOD, JR., M.D., AND ROBERT
A. MOORE, M.D., Editors

CASE 32

PRESENTATION OF CASE

B. M., aged 50, a laborer, entered Barnes Hospital on the Surgical Service on August 2 and died on August 9, 1942.

Chief Complaints.—Abdominal pain, vomiting.

Family History.—The patient's father committed suicide; his mother died from carcinoma of the breast.

Past History.—The following diseases are recorded: painful, tender, swollen knees, lasting several weeks, at the age of 30; pneumonia in 1941. For the last ten to fifteen years the patient had had loose, watery bowel movements, occasionally bloody, and mucus in the stools was frequent. This was diagnosed as colitis. In September 1940 an appendectomy was done and the wound drained.

Present Illness.—Three days previous to admission, the patient developed sharp, diffuse, cramping abdominal pain, most intense around the umbilicus. This continued intermittently until ad-

5. Massachusetts, fourteen counties, total area 8,040 square miles, population 4,316,721 (1940); New Jersey, twenty-one counties, total area 8,244 square miles, population 1,269,000 (1930).

6. New York, sixty-two counties, total area 47,620 square miles, population 13,345,226 (1936).

7. Missouri, one hundred fifteen counties, total area 69,420 square miles, population 3,775,737 (1940).

mission. The following day he began to vomit bile-stained material, then partly digested food and, on the day of admission, fecal material. The last bowel movement occurred just before the onset of pain.

Physical Examination.—Temperature was 38.2 C., pulse 100, respiration 24, blood pressure 128/96. The patient was well developed but poorly nourished and appeared to be in no distress. The eyes showed bilateral scars extending from the inner canthus to the limbus. The teeth were carious and dirty. The tongue was dry and beefy red. The lungs were clear. The heart showed no abnormalities. The abdomen was slightly distended and there was moderate tenderness to palpation, most marked to the right of the umbilicus and over the descending colon. There was no rebound tenderness. No signs of fluid or masses were elicited. On auscultation, peristaltic waves were heard. The liver and spleen were not felt. Rectal examination revealed external hemorrhoids but nothing else abnormal. Neurologic examination showed normal reactions.

Laboratory Findings.—Blood count, red cells 6,310,000, hemoglobin 130 per cent, white cells 10,300. Urinalysis, normal except sugar 2 plus (after glucose infusion). Blood chemistry, total proteins 4.4 grams per cent, albumin 2.9, globulin 1.5.

Course in Hospital.—August 3. A diagnosis of intestinal obstruction was made and a laparotomy was performed. When the peritoneal cavity was opened, a large amount of free, straw-colored fluid escaped and the entire small intestine was found to be dilated to about three times its normal size. In the right lower quadrant at the junction of the ileum and cecum there were two bands which constricted the last six inches of the ileum in such a manner that it was impossible to free it without rupturing the bowel. Therefore an ileostomy was done by inserting into the ileum a catheter which was led out through a stab wound. Ten grams of sulfanilamide were placed in the peritoneal cavity. The patient withstood the operation well.

August 4 to 6. The patient's condition was considered satisfactory. After parenteral fluids, containing salt, glucose and amigens, had been given, the red cell count fell to 4,210,000. Drainage from the ileostomy tube was free.

August 7. The temperature suddenly rose to 39.8 C. and the pulse to 120. Generalized, cramping, abdominal pain and distention developed. The latter was not influenced by a Miller-Abbott tube. The ileostomy drainage diminished. The total blood proteins fell to 3.0 grams per cent, with albumin 2.0, globulin 1.0. The white blood cells were 32,300; the nonprotein nitrogen 48 mg. per cent. Generalized peritonitis was suspected and the patient was reoperated upon. When the peritoneal cavity was opened, foul-smelling, free fluid welled up. A generalized peritonitis was encountered with numerous adhesions separating pockets of pus throughout the peritoneal cavity. Two perforations were found in the loop of the terminal ileum distal to the ileostomy. This and a portion of the cecum and appendix were clamped and resected and an

ileocolostomy performed. Culture of peritoneal fluid grew *E. Coli*.

August 8. Temperature was 104 F., pulse 135, respiration 40. The patient appeared very toxic, delirious and cyanotic. Emergency measures were unavailing.

Pathologic Report of Resected Ileum.—Gross specimen showed a thickened wall and at one point there was a constriction with an absence of part of the muscle and serosa which was thought to have been possibly an artefact. There was considerable edema about the mucosa. Microscopic examination showed the mucosa intact for the most part except at one place which was considered probably an artefact. The submucosa was markedly edematous with but a few cells, mostly lymphocytes and plasma cells. The blood vessels were injected. The serosa was greatly thickened with evidence of acute nonspecific inflammation.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: This case at first glance seems simple enough. The patient had an appendectomy with a draining wound and a year later had intestinal obstruction of the ileum. However, more careful examination of the data reveals that there are many tricks to this case. At the second operation, the record states, the appendix was resected so apparently the patient had not previously had an appendectomy. Before we consider the organic lesion, it might be well to inquire as to what this obstruction did to the patient. On admission he had a red blood cell count of 6,300,000 and hemoglobin of 130 per cent. Why was this, Dr. Taussig?

DR. BARRETT TAUSSIG: I suppose that because he lost so much fluid in vomiting and had an inadequate fluid intake, he developed this degree of hemoconcentration.

DR. ALEXANDER: That is logical because, when he received intravenous fluids later on, this condition improved. Do you believe that hemoconcentration in such cases as this is caused only by the loss of fluid in vomiting?

DR. TAUSSIG: It is caused partly by loss of fluid from the blood vessels into the tissue spaces and the peritoneal cavity.

DR. ALEXANDER: I believe very little is really understood about what happens in intestinal obstruction. Are there any other suggestions as to why this hemoconcentration takes place?

DR. CHARLES DUDEN: Because of a loss of electrolytes from vomiting. This patient may have had an effusion of fluid into the intestinal lumen as well as into the peritoneum.

DR. ALEXANDER: Yes. Rabbits do not vomit, but intestinal obstruction in rabbits may result in the loss of 13 per cent of body weight into the intestinal loops. As electrolytes are lost, less water is retained in the body. Chloride is lost, but carbonate is not lost in the beginning and alkalosis results. Patients lose protein to a certain extent but, in some cases, as in this one, the nonprotein nitrogen actually rises. What is the explanation of this fact, Dr. Wood?

DR. W. BARRY WOOD: The usual explanation given is that of "prerenal" azotemia.

DR. ALEXANDER: These patients do have an oliguria and therefore some retention of nitrogen. All these points regarding intestinal obstruction are still rather obscure. The patient's proteins went down to 3 Gm., which is a very low value, but there is no record of any generalized edema. Constricting bands of the ileum were found at the first operation. The question arises as to what might have caused these constricting bands. Are there any suggestions?

DR. PAUL HAGEMAN: This man had had a laparotomy. He may have had adhesions from his previous operation.

DR. ALEXANDER: Yes, and his previous operation may have been an appendectomy, but probably was not. Later on he had two perforations distal to the obstruction, which complicates the picture. It is a question as to whether or not these bands are part of the same process which caused adhesions.

DR. DUDEN: The constrictions seem to indicate that part of the bowel was chronically involved in some way—possibly by a vascular lesion, but more likely by some chronic granulomatous lesion. It was obstructed in more than one place. The obstruction was nodular and sounds like the nodular “cobblestone” formation of regional ileitis.

DR. ALEXANDER: There is a good deal in favor of regional ileitis in this case. What other symptoms are in keeping with such a diagnosis?

DR. DUDEN: He had had chronic draining sinuses following a surgical procedure. The appendix was not removed, although he had had symptoms of appendicitis.

DR. ALEXANDER: Does regional ileitis give the same symptoms as appendicitis?

DR. DUDEN: Yes. This patient had chronic attacks with diarrhea and fever.

DR. ALEXANDER: Does regional ileitis obstruct the bowel frequently?

DR. DUDEN: Yes.

DR. ALEXANDER: About 10 per cent of cases I think. Does regional ileitis perforate?

DR. DUDEN: Yes, and produces fecal fistulas from old segments of the bowel that are malnourished.

DR. ALEXANDER: An inflammation of the terminal ileum may have reached the peritoneal surface to cause constriction and perforation. The pathologic report, however, indicates that the mucosa was intact. If the mucosa is intact and there are few white blood cells, regional ileitis or any acute inflammation does not seem likely.

DR. DUDEN: That is true—there should be more hyperplasia than that.

DR. ALEXANDER: Do you think that this pathologic picture rules out regional ileitis, Dr. Wood?

DR. WOOD: No, I do not believe so. That is the description of a single block of tissue and the result depends upon the location of the block in relation to the principal lesion. The clinical evidence is very strongly in favor of that diagnosis, it seems to me.

DR. ALEXANDER: The clinical evidence is, but I should think it would be difficult to find any block of tissue in terminal ileitis that would escape signs of inflammation. Perhaps the inflammation may have quieted down and become chronic, but it does not seem likely to me. The pathologic description said that the mucosa was intact, the submucosa was very edematous, and the serosa was thickened. I interpreted that to be caused by constriction. I do not know why the serosa was thickened but it was my feeling that edema was caused by a constriction. Are there any other suggestions?

DR. WOOD: Do you not have to postulate some lesion which has led to perforation?

DR. ALEXANDER: Yes.

DR. WOOD: Then you would have to see more in the pathologic section than was described here. The changes you have described would not lead to perforation.

DR. ALEXANDER: That is right. As long as we are postulating, I shall postulate. This lesion was in the terminal ileum. There was not very much of the ileum below it. Between the ileum and the ileocecal valve there must have been a very small segment of bowel, and my postulation is that the lesion that perforated was below the constriction. We have no section of that.

DR. HAROLD SCHEFF: I should like to suggest ileocecal tuberculosis.

DR. ALEXANDER: Yes. This is the place for it. A great number of cases of intestinal tuberculosis appear at the ileocecal region. This may have been tuberculosis of the cecum, involving some of the ileum. It would be sur-

prising, however, to find nothing above the terminal ileum. How frequently is this condition primary?

DR. SCHEFF: It is infrequent, but it does occur.

DR. ALEXANDER: How frequently do you see gross blood in the diarrhea of chronic tuberculosis?

DR. SCHEFF: Rarely. Another possibility is amebiasis.

DR. ALEXANDER: What about the location?

DR. SCHEFF: It is usually in the cecum.

DR. ALEXANDER: How frequently is the ileum involved in amebiasis, Dr. Scheff?

DR. SCHEFF: It is rare but it can occur.

DR. ALEXANDER: What about obstruction?

DR. SCHEFF: Perforation is uncommon and obstruction is even more uncommon in amebiasis.

DR. DUDEN: Perforation is very rare.

DR. HAGEMAN: It certainly occurs, though.

DR. DUDEN: We could assume that this was associated with the mechanics of operation. The perforation might have been secondary to the operation.

DR. ALEXANDER: In favor of amebic dysentery is the fact that the patient certainly had dysentery. The duration of the disease is in keeping. Postoperatively, as you say, he may have had great distention, and this distention may have been sufficient to perforate a deep ulcer. I think amebic dysentery is a likely diagnosis.

DR. BERTRAND GLASSBERG: What about the involvement of the liver in an amebiasis of fifteen years' duration?

DR. ALEXANDER: How frequent is liver abscess in amebiasis? I do not think it is necessarily to be expected.

DR. DUDEN: Actinomycosis must be considered.

DR. ALEXANDER: Would that cause diarrhea for fifteen years?

DR. DUDEN: It can establish a chronic diarrheal disease. The intestinal tract is involved in from 21 to 25 per cent of cases of actinomycosis.

DR. ALEXANDER: Is there any elective location?

DR. DUDEN: It is very common in the ileocecal region and involves the terminal ileum more commonly than the ascending colon. It is characteristically in the same locality as tuberculosis. There are more often granulomatous masses within the lumen.

DR. LEWELLYN SALE: How about the age incidence for regional ileitis? If this had been a chronic regional ileitis one would expect to find more change in the ileum than even in that part from which the section was taken. I thought, from the clinical picture, that this was regional ileitis, but these considerations are against it.

DR. HAGEMAN: It seems to me that it is difficult to consider specific diagnoses in the light of the pathologic report on the portion of the ileum and cecum involved. It is hard to imagine that tuberculosis, actinomycosis, amebiasis or regional ileitis could have been missed in that examination. The point that arises in my mind is that the surgeon said that these bands were present in such a manner that it was impossible to free the ileum without rupturing the bowel. He must have gone through certain manipulations in order to ascertain this.

DR. ALFRED LARGE: I saw the first operation and the operative note is a little incorrect. The terminal ileum and part of the cecum were involved in a dense inflammatory mass which made resection of that segment risky. It was a chronic inflammatory mass with some acute changes around it.

DR. ALEXANDER: Are there other suggestions?

DR. TAUSSIG: Why does one have to postulate a previous disease of the ileum? Might not the perforation have occurred because of vascular obstruction and necrosis of tissue secondary to these constricting bands?

DR. ALEXANDER: It might have, but that does not help us in deciding what caused the constricting bands and why the patient had diarrhea for fifteen years. There seems to be debate and disagreement of opinion as to whether this patient had regional ileitis or whether, on the basis of the pathologic report, the lesion is located somewhere in the cecum and involves the lower ileum. I do not see how we can possibly answer this question.

The evidence balances rather evenly and I think it is a matter of opinion.

DR. WOOD: Dr. Alexander, would you be willing to express your own opinion?

DR. ALEXANDER: I would say this: it is difficult for me to make a diagnosis of any chronic inflammatory process when the pathologic report says that the mucosa was intact and that there were no signs of inflammation. I cannot regard it as regional ileitis and, therefore, I would expect the lesions to be the result of the the constriction, but it might well be amebic dysentery or non-specific typhilitis.

DR. ALEXANDER'S DIAGNOSIS

Typhilitis, probably amebic.

CLINICAL DIAGNOSIS

Regional ileitis.
Generalized peritonitis.

ANATOMIC DIAGNOSIS

Amebic dysentery with fibrosis and ulceration of cecum and ascending colon.
Fibrous peritoneal adhesions about the cecum.
Acute serofibrinous peritonitis, generalized.
Bronchopneumonia of the upper and lower lobes of both lungs.

PATHOLOGIC DISCUSSION BY DR. MARGARET SMITH

The cecum had not been removed at operation. Amebic ulceration of the cecum with fibrosis of the underlying wall was present. The fibrosis indicated the long duration of the disease but was not sufficient to account for the intestinal obstruction. The small distal section of ileum which was present at autopsy did not show ulceration but the wall showed a moderate increase of connective tissue. The frequency with which the appendix is involved in amebiasis of the cecum makes it seem probable that it was the site of amebic ulceration when the appendectomy was performed. The extensive adhesions about the cecum and lower ileum resulting from the appendectomy rather than the moderate fibrosis of the wall of the intestine offers the best explanation of the intestinal obstruction.

CASE 33

PRESENTATION OF CASE

L. C., a Negro woman, aged 33 years, entered Maternity Hospital for the fifth time on January 30 and died on February 6, 1943. On each of the four previous admissions there was normal delivery of a healthy child.

Chief Complaints.—Nausea, vomiting and abdominal pain.

Family History.—Mother died of carcinoma of the breast.

Social History.—The patient was born in Texas and had lived in St. Louis eighteen years. She went through the eleventh grade at school and married at 20. She kept house and cared for four young children. No alcohol or drugs were used.

Past History.—Other than childhood diseases without complications the patient had been in excellent health.

Systemic History.—Epistaxis had occurred periodically during the last three years. There was a spontaneous miscarriage at 6 months during the first pregnancy. The patient's average weight was 180 pounds.

Present Illness.—Three weeks previous to admission, the patient began to have dizzy spells. She was told by her doctor that her blood pressure was high and he ordered her to bed. Dizziness disappeared after two days of rest. Twenty-four hours before admission nausea occurred suddenly and persisted. The patient vomited once and brought up a considerable amount of brown liquid. Ten hours later she developed cramping pains in the upper abdomen which radiated to both lower quadrants. This occurred about every ten minutes and was severe. It did not resemble labor pains which the patient had experienced with previous pregnancies. The pain gradually diminished somewhat but persisted until admission.

Physical Examination.—Temperature was 37 C., pulse 80, respiration 20, blood pressure 140/104. The patient was obese. She did not appear to be ill and was not in active labor. The pupils were regular and reacted normally. The pharynx was moderately reddened. The lungs were clear. Percussion of the heart borders was uncertain because of obesity. The rhythm was regular and the sounds of good quality. A₂ was accentuated. Tumor of pregnancy presented in the abdomen. No tenderness or local resistance was recorded. The head was not engaged in the pelvis. Vaginal examination revealed the presenting part dipping into the pelvic inlet. The cervix, 3 cm. long, was very firm and admitted one finger. (It was estimated that pregnancy was two weeks before term.) Rectal examination was normal. There was slight pitting edema over the right tibia.

Laboratory Findings.—Blood count, red blood cells 6,060,000, hemoglobin 13 grams, white blood cells 7,650, differential count: juvenile forms 15 per cent, "stab" forms 55 per cent, segmented forms 15 per cent, lymphocytes 15 per cent. Urinalysis, specific gravity 1.022, alkaline, albumin none, sugar trace, acetone trace, microscopic normal.

Course in Hospital.—On the evening of admission, the temperature rose to 38.2 C. and the pulse to 90. The patient complained of general abdominal discomfort but the pains had ceased. During the day she was nauseated constantly and vomited twice. The blood pressure was 130/80. There was little change in her general condition for the next three days.

February 3. She became restless and apprehensive. The temperature was 37.5 C., the pulse rose to 135; respiration to 40 and the blood pressure to 145/105. There was moderate dyspnea but no obvious cyanosis. The left border of cardiac dullness was in the fourth interspace at the midaxillary line. The rhythm was regular, the sounds of fair quality. There was a systolic murmur along the left sternal border. There were moist rales at the left base above the high diaphragm. The right lung was clear. Very slight pretibial pitting edema was present. The abdominal signs were those of admission. Digitalization was begun. That evening the patient delivered a living female infant precipitously in bed.

February 4. Temperature was 37.5 C., pulse 110,

respiration 22, blood pressure 135 95. Following delivery, the patient was more comfortable and her general appearance improved. She remained nauseated, however, and vomited occasionally. Rales at the left base had diminished but many were heard at the right base. The abdomen was distended and tympanitic. The liver was not palpable. The urine suddenly became red, contained 4 plus albumin and very many red blood cells. An electrocardiogram was normal.

February 5. Nausea and vomiting persisted and the patient complained of marked abdominal discomfort. The abdomen was distended greatly especially in its upper portion and was dull to percussion below the umbilicus, which was somewhat retracted. A large lower abdominal mass was made out vaguely, over which there were muscle rigidity and marked tenderness. Vaginal examination revealed a patulous cervix admitting two fingers but the uterus was not readily palpable. Rectal examination showed induration and marked tenderness on the left. During the day, the patient developed shock with pallor, cold perspiration, thready pulse and a fall in blood pressure to 90 80. The temperature rose to 39 C.; the pulse to 140. Emergency treatment was not effective. A generalized convulsion occurred, and then death. The urine showed some blood cells in the morning; none in the afternoon. Four plus albumin had persisted.

There were no recorded bowel movements without enemas during hospitalization.

CLINICAL DISCUSSION

DR. HARRY ALEXANDER: This patient was seen by several competent consultants in medicine and surgery and no diagnosis was agreed upon. There is some advantage at the completion of a case in taking a long distance view of it. However, in this case, even from this viewpoint the diagnosis is not very obvious. The patient came in with the presenting symptoms of nausea, vomiting and intense abdominal pain. Do you believe, Dr. Allen, that these symptoms had anything to do with labor?

DR. WILLARD M. ALLEN: I think it is probable that they did not. Ordinarily labor does not begin that way. Of course, the obstetrician might suspect that the patient had some separation of the placenta, which produces severe and often continuous abdominal pain. It often occurs, as this did, when the patient is near term. We have to admit, however, that the onset of this patient's illness was not that of normal labor.

DR. ALEXANDER: Three weeks before all this happened she had dizziness and was put to bed by her doctor. She had some high blood pressure, nausea and vomiting when she entered the hospital. Does this suggest preeclampsia?

DR. ALLEN: It certainly suggests it. You cannot ignore elevated blood pressure. She did not have albuminuria, but that would not absolutely exclude preeclampsia.

DR. ALEXANDER: Is intense abdominal pain part of the picture of eclampsia or toxemia?

DR. ALLEN: In eclampsia the patient may have severe abdominal pain, but not usually without other symptoms. There should be more elevation of the blood pressure. This patient was very obese and it undoubtedly was difficult to palpate the uterus satisfactorily. I should say that she had no abnormal bleeding, however, and that fact is against separation of the placenta as a cause for the abdominal pain.

DR. ALEXANDER: Her symptoms certainly are in keeping with some sort of peritoneal irritation: severe pain, nausea and vomiting, within twenty-four hours fever, rise in pulse rate, a shift to the left in her blood count and, terminally, signs of a fairly frank peritonitis. It seems probable that if these were not the result of an obstetric condition, peritoneal irritation caused them. If her illness began with sudden peritoneal irritation, ending probably in peritonitis, the question is what might have caused this? Are there any suggestions? Dr. Scheff?

DR. HAROLD SCHEFF: Acute appendicitis.

DR. ALEXANDER: This, of course is a very common thing—the commonest thing to consider. The pain I think was epigastric and that is in keeping.

DR. SCHEFF: Usually in appendicitis the pain comes before the nausea. This patient had the nausea first.

DR. ALEXANDER: She had a shift to the left, her blood count was not elevated and she had mild fever. Dr. Womack, do you think the sudden onset of pain and peritoneal irritation might indicate appendicitis? If this were acute appendicitis in pregnancy with a very large uterus, would the physical signs be difficult to elicit?

DR. NATHAN A. WOMACK: Not difficult, but different. The cecum is usually very high—it rides up under the gallbladder. The local point of tenderness in appendicitis at that stage of pregnancy may be slightly above the umbilicus. However, acute appendicitis usually begins with pain, not nausea and vomiting.

DR. ALEXANDER: In this instance appendicitis might have explained the high abdominal pain. What other suggestions may there be?

DR. ALLEN: I would like to suggest mesenteric thrombosis.

DR. ALEXANDER: That is a very rare disease, is it not?

DR. ALLEN: Yes, so far as I know.

DR. ALEXANDER: How often does it complicate pregnancy?

DR. ALLEN: It does occur in association with pregnancy at term. I have seen one such patient. She had thrombosis of the middle colic artery. She had partial thrombosis before the onset of labor. She was admitted with upper abdominal pain. Labor came on later and she was delivered uneventfully.

DR. ALEXANDER: It occurs with pregnancy or with some serious lesion on the left side of the heart, which this patient obviously did not have. Are there any other suggestions? Dr. Duden?

DR. CHARLES DUDEN: Along the same line as appendicitis, I would like to suggest diverticulosis, diverticulitis or rupture of a diverticulum, which would explain the upper abdominal pain, although the nausea and vomiting do not ordinarily precede the pain.

DR. ALEXANDER: Are these very uncommon?

DR. DUDEN: About as uncommon as mesenteric thrombosis.

DR. JOHN SMITH: Another consideration is dissecting aneurysm of the aorta. The upper abdominal pain, the precipitous delivery and, finally, the hematuria might mean that such a lesion was progressing. The anoxemia of the bowel might produce spasm, and might have given rise to intense uterine contractions.

DR. ALEXANDER: Dr. Sale, do you think this might be a dissecting aneurysm?

DR. LLEWELLYN SALE: I do not think so.

DR. ALEXANDER: She was a young woman, with no syphilis and no arteriosclerosis.

DR. SALE: Syphilis is not a factor to be considered. She had a slight degree of hypertension. When you are discussing abdominal pain and peritoneal irritation in an obese woman who has had five pregnancies, the gallbladder has to be considered.

DR. ALEXANDER: Would you say, then, that a ruptured gallbladder caused this patient's death?

DR. SALE: I do not think she presented the picture of a gangrenous gallbladder with rupture. I merely suggested it as one possible cause of such symptoms.

DR. CARL MOORE: Partial obstruction could be considered. She initially vomited a brown fluid which might possibly have been fecal. Dr. MacFarlane emphasized the fact that she had no bowel movements in the hospital except by enema. The symptoms are atypical, but one might consider it.

DR. ALEXANDER: Dr. Womack, what do you think of this suggestion?

DR. WOMACK: I think it is the most likely suggestion.

DR. ALEXANDER: There is a great deal in favor of it. The patient vomited throughout the entire course of her illness. She had great distension toward the end. There were no recorded bowel movements. Finally, there were the signs of peritonitis: fever, leukocytosis and collapse.

DR. WOMACK: I find it hard to reconcile the red cell count of six million with the hemoglobin of 13 Gm.

DR. ALEXANDER: Dr. Moore, how do you explain that?

DR. CARL MOORE: The only way to explain it is to assume a high degree of hypochromia of her red cells, unless you want to assume that the red cell count was wrong.

DR. WOMACK: The red cell count would be in keeping with obstruction. The lack of bowel movements is not in keeping with mesenteric thrombosis. Diverticulitis in one this young is most unusual, unless she had some congenital antemesenteric diverticulum around the cecum. Dissecting aneurysm should not produce the constipation and vomiting. Perforated peptic ulcer begins with knife-like pain before the vomiting.

DR. ALEXANDER: A period of six days went by before she really collapsed. During that long interval nausea and vomiting continued without prominent abdominal pain. In fact, it was called only "abdominal discomfort." From the record it does not appear that she had constant abdominal pain. Did she, Dr. Allen?

DR. ALLEN: I am not sure but I think she did have pain all the time. As to the high red count, the one situation in which we see a picture like this is in severe eclampsia in which there is frank hemoconcentration, often reaching 14 or 15 Gm. I do not think the six million red count and 13 Gm. hemoglobin is disproportionate. The normal red counts at term are four million with 10 Gm. of hemoglobin. I think we all wondered at the time if she had hemoconcentration with eclampsia and no convulsions. Nausea and epigastric pain are not uncommon in eclampsia sufficiently severe to produce hemoconcentration. She did not have profuse edema or albuminuria. These two facts are against a diagnosis of eclampsia.

DR. EDWARD MASSIE: Is instrumentation this late in pregnancy a possible contributory factor?

DR. ALLEN: A patient who has infection from ruptured membranes or vaginal examinations prior to term has a foul discharge for a few days and peritonitis may develop, but more likely septicemia. The organisms enter the blood stream through the placenta and there is a fulminating illness before there is peritonitis.

DR. ALEXANDER: There is a question as to what else may cause peritoneal irritation. What about tuberculous peritonitis? This may begin acutely with pain. What about the blood count? Dr. Moore, is it consistent with tuberculous peritonitis?

DR. CARL MOORE: Possibly, but it is much more consistent with an acute infection.

DR. ALEXANDER: It is possible to have tuberculous peritonitis coming on very acutely. We know nothing about this patient's lungs. She had another disturbing symptom of a sudden outpouring of red cells in the urine, lasting for a day. Does this happen in appendicitis?

DR. WOMACK: One occasionally sees a few red cells in the urine in appendiceal abscess in which the inflammatory process is over the ureter. It is not frank blood. Was that a catheterized specimen?

DR. ALEXANDER: No.

DR. WOMACK: Then it should be ignored, should it not, Dr. Allen?

DR. ALLEN: Yes, it should be ignored.

DR. ALEXANDER: What about her heart, Dr. Massie? She had dyspnea, a respiratory rate of 40, a rapid pulse, some signs of hypertension. Do you think it is possible that any of the abdominal disturbance was cardiac?

DR. EDWARD MASSIE: No, I think what we see in her heart is a reflection of her general condition. She was a very ill woman, which accounts for the increased pulse rate and the systolic murmur. Cardiac enlargement is not certain because she was so obese. The moist rales in the left base could be pneumonitis or early failure, but I believe the heart factor here is minimal.

DR. ALEXANDER: Dr. Womack, do you think pancreatitis might be a factor?

DR. WOMACK: It could produce this blood picture. But the history does not suggest pancreatitis. The onset of pancreatitis is marked by extreme pain, and shock follows almost immediately because of the tremendous outpouring of plasma into the peritoneal cavity.

DR. ALEXANDER: She had terminally rapid respiration and a rise in temperature. Is it possible, Dr. Womack, that she had a pulmonary infarct?

DR. WOMACK: Possible, but unlikely in view of the findings in the abdomen.

DR. ALEXANDER: At one time, Dr. Allen, you thought it possible that this patient had a ruptured uterus toward the end.

DR. ALLEN: Yes, this patient did have a lower abdominal mass, not easily outlined. She went into collapse about three days after delivery and we thought possibly she might have had a ruptured uterus with developing peritonitis from that or possibly a hemorrhage. But hemorrhage usually follows a rupture in less than three days time. There was no evidence of rupture of the uterus on examination, however, although of course the interior of the uterus was not examined.

DR. ALEXANDER: We have a wide choice of diagnoses. It has been observed that pain usually precedes nausea and vomiting in appendicitis. How constant is that, Dr. Womack?

DR. WOMACK: I should say that only about 5 per cent of patients fail to show that sequence. However, at the time of parturition abdominal pain may be masked as the cramps of labor.

DR. ALEXANDER: You favor intestinal obstruction as the diagnosis?

DR. WOMACK: Yes, with secondary perforation of the bowel. My second choice is appendicitis. I would not be interested in any other diagnosis.

DR. ALEXANDER: Dr. Scheff?

DR. SCHEFF: I think she had appendicitis with paralytic ileus.

DR. W. BARRY WOOD: I saw this patient about the same time that Dr. Womack did. As I recall it, the general clinical picture suggested intestinal obstruction without any very good signs of peritonitis. There was little abdominal tenderness and the patient did not complain of pain at all. The question arose as to whether it was organic obstruction of the bowel or paralytic ileus secondary to peritonitis.

DR. WOMACK: This case is gradually coming back to me. I recall the picture of shock more vividly than anything else. Of course, at such a time a patient's sensorium is dulled and one cannot elicit some of the signs that could be elicited earlier.

DR. WOOD: Just before she died there was definite abdominal tenderness in both lower quadrants which makes one think she had a terminal peritonitis. Is that correct, Dr. Alexander?

DR. ALEXANDER: I think she had initial peritoneal irritation and sequentially a definite peritonitis.

DR. WOOD: However, at the time that Dr. Womack saw the patient the signs of peritonitis were not definite.

DR. ALEXANDER: Dr. Wood, do you think that tuberculous in this case is extremely unlikely?

DR. WOOD: Yes, I do. Chiefly because of the history.

DR. ALEXANDER: Such a thing has been described—

sudden onset of abdominal irritation and going on to a very rapid death.

DR. WOOD: Would the first symptoms be nausea and vomiting?

DR. ALEXANDER: There was only ten hours difference between the appearance of the nausea and vomiting and the pain.

DR. WOOD: Would she die in such a short time? The course would seem to me to be too acute for tuberculous peritonitis.

DR. ALEXANDER: Are there other suggestions?

DR. JOHN HOBBS: I would like to mention some facts for and against the diagnosis of appendicitis. It is relatively rare in pregnancy, and particularly in the last trimester of pregnancy. Most cases occur as a result of some previous inflammation which flares up during the pregnancy. If there is acute involvement of the appendix during pregnancy the omentum is inadequate in walling off the infection. The tissues are very vascular and the large uterus sometimes serves as a wall for the appendiceal abscess. The infection is spread over the abdomen very rapidly. The suppuration spreads and a generalized peritonitis appears very quickly.

DR. ALEXANDER: Appendicitis would account for all the symptoms in this case then?

DR. HOBBS: Yes.

DR. ALLEN: We thought this patient was improving, and it is borne out by her chart, until about the day before she went into collapse. I think she had an enema that morning and then began to get worse—we wondered if the enema might have stirred things up if she had a localized collection of pus.

DR. ALEXANDER: Dr. Womack, would you care to modify your figure of 5 per cent for patients with appendicitis who have nausea before pain?

DR. WOMACK: On the contrary, I think I have been very generous in admitting even 5 per cent. I would say that only in a very extraordinary case will the nausea and vomiting precede the pain. However, I hope my dogmatism will not mislead anyone.

DR. ALEXANDER: It will not mislead me for I think she had appendicitis. My second choice is intestinal obstruction.

DR. ALEXANDER'S DIAGNOSIS

Acute appendicitis complicating late pregnancy.
Perforation of appendix.
Generalized peritonitis.

CLINICAL DIAGNOSIS

Pregnancy at term.
Intestinal obstruction of unknown cause.
Generalized peritonitis.
Preeclampsia, mild.
Hypertensive cardiovascular disease with cardiac failure.

ANATOMIC DIAGNOSIS

Fecolith in lumen of appendix.
Necrotizing appendicitis with rupture into peritoneal cavity.
Serofibrinous peritonitis, 1,000 cc.

PATHOLOGIC DISCUSSION

DR. ROBERT MOORE: There are four things to consider: first, the principal disease; second, did this patient have any anatomic manifestations of toxemia of pregnancy; third, did she have hypertension with permanent change in the tissues of the body and, fourth, the nature of the terminal manifestations that were called shock. The principal disease was acute appendicitis with perforation and a fecolith in the lumen of the appendix, obstructing its distal three fourths. Microscopically, the appendix was entirely necrotic. It confirmed entirely the diagnosis of gangrenous inflammation of the appendix with perforation. The point raised by Dr. Alexander—for what period of time did she have acute ap-

pendicitis and peritonitis?—may be answered thus: The fluid was serosanguinous in character, with no organization, and only a slight beginning of loculation. I interpret that to mean that the peritonitis was of from four to six days' duration. In general, one finds at autopsy loculation following peritonitis of more than six or seven days' duration. There was no anatomic obstruction of the intestine. The character of the fluid in the peritoneal cavity did not lead us to believe that any of the enema fluid had gotten into the cavity. It was a serosanguinous exudate.

Dr. Edwards looked up a little of the literature on this subject. Dr. Hobbs has already covered some of the points. There is not complete agreement in the literature on appendicitis in pregnancy. These facts seem to be in a general way agreed upon. One per cent of pregnant women get appendicitis. Two and one half per cent of all appendicitis in women occurs during pregnancy. Eighty per cent of the instances of appendicitis in pregnancy occur during the first and second trimesters. The mechanism is that as the uterus comes up out of the pelvis the appendix may be pushed to one side, as Dr. Womack said, and kinked. Constipation may play a role. Primary appendicitis in pregnancy is unusual, but a recurrence of a previous attack is more common during pregnancy than during the nonpregnant state. The mortality in one series was 50 per cent with appendicitis and perforation. Appendicitis in most patients will induce premature delivery. Of 370 laparotomies in pregnant women 122 or about 33 per cent revealed acute appendicitis. Perhaps you would like to say something about these facts, Dr. Allen.

DR. ALLEN: I feel that we overlooked the diagnosis of appendicitis for one very definite reason. We considered the patient as having a toxemia when she came in, and we were prone to ignore some of the symptoms because there was such a variety of complaints. It is true, as Dr. Womack says, that only about 5 per cent of patients with appendicitis have nausea before the pain. Also, about 5 per cent of patients at term have vomiting anyway, just from pressure and distention. We ignored the symptoms for that reason. In retrospect I can say that we probably should have paid attention to the marked shift to the left in the differential white cell count. But I would like to point out in closing that we could not have accomplished anything if we had made the diagnosis and had operated.

ABSTRACTS AND DIGESTS

ALLERGIC REACTION TO DRIED HUMAN PLASMA

Allergic Reaction to Dried Human Plasma. Wm. J. Colonnell, Lt. Commander (M.C.) U. S. N. R. U. S. Nav. M. Bull. 41:1356 (September) 1943.

An adult white male, with no allergic manifestations and no history of such in his antecedents, had received several transfusions of whole blood without reaction. Then, he received two transfusions from the same donor, one month apart; the last one being followed by a slight urticaria which disappeared with a few minims of adrenalin. One month later he received, intravenously, activated pooled human plasma. When about 175 cc. had been given, he had suffusion of the eyes, lacrimation, widespread urticaria, circumocular, oral and laryngeal edema and wheezy breathing. The situation was controlled by adrenalin. Subsequently he received further transfusions of whole blood without reactions ensuing.

Intracutaneous tests upon the patient gave a three plus reaction to ragweed and a one plus reaction to a 1:10 dilution of the activated plasma used in the transfusion.

The donor who had given the blood on two sequential occasions (the last having been followed by urticaria) had a family history of hay fever on his mother's side and he, himself, developed lacrimation when he passed fields of weeds, although he did not consider himself as having hay fever. Intracutaneous tests gave a three plus reaction to ragweed, a two plus reaction to mixed grasses and a three plus reaction to the 1:10 dilution of the plasma which had been followed by the allergic reaction.

Passive transfer tests with the serum of the patient gave positive reactions to ragweed and to the 1:10 plasma solution. The plasma was tested intracutaneously upon known ragweed sensitive individuals, allergic individuals not sensitive to ragweed and upon nonallergic persons, resulting in greater reactions in the ragweed sensitive individuals.

Comment: This clinical report is further evidence that sensitization to allergen can develop in the recipient after transfusion of blood from an allergic donor, an observation first made in 1919. However, of greater significance is the demonstration of an allergen in human plasma as a possible cause for the reactions that occasionally follow the infusion of pooled human blood plasma.

C. H. EYERMANN, M.D.

ABSENCE OF SKIN IRRITANTS IN VESICLES

The Absence of Skin Irritants in the Contents of Vesicles. Marion B. Sulzberger, Commander (M.C.) U. S. N. R., and J. Harry Katz, Lt. (M.C.) U. S. N. R. U. S. Nav. Med. Bull. 41:1258 (September) 1943.

Well developed blisters were produced on different skin sites of a series of human volunteers by the application of measured amounts of poison ivy extract. The contents of these vesicles and the vesicle tops were then applied by the patch test technic to normal human skin and to skins known to be sensitive to poison ivy. Also, the blister fluids from severe cases of actual poison ivy dermatitis were tested in similar fashion. In no instance was irritation or vesiculation induced.

The vesicle contents of blisters induced by liquid mustard gas and liquid lewisite were tested by the same technic. No reaction resulted.

Comment: These observations are of value to civilian practice in the demonstration that the contents of poison ivy vesicles are incapable of producing new lesions. It is a commonly held belief that the secondary or delayed lesions so frequently seen in clinical poison ivy dermatitis are due to the breaking of the vesicles and the spread of their

contents to new skin areas. Such progression of the irritation, then, must be due to some other mechanism.

C. H. EYERMANN, M.D.

FROM THE COMMITTEE ON CARDIAC DISEASES

CARDIOVASCULAR ALLERGY

Cardiovascular Allergy. Hal M. Davison, James C. Thoroughman and Harold Bowcock. South M. J. 36:560 (August) 1943.

The authors make a very good case for the occurrence of the allergic reaction in cardiovascular tissue. Their reasonable assumption is that the characteristics of the allergic reaction, (a) increased capillary permeability, (b) cellular infiltration, (c) edema and (d) smooth muscle spasm may occur in the actively metabolizing tissue of the cardiovascular system, particularly since there is rhythmic function and an easily disordered nervous system involved. The first portion of the article is devoted to a review of the standard textbooks of allergy; Vaughan, Roew, and H. L. Alexander and a symposium by Thomas contain only a mention of the cardiovascular manifestations of allergy, which the author and the discussers of the paper believe inadequate.

Many allergic manifestations are transient, leading only to transient disturbance of physiology, and not represented in pathologic studies. Since the electrocardiogram represents the most accurate means of studying pathologic physiology of the heart it has been used by various authors to show disturbance of conduction, heart block, premature ventricular contraction and alteration of the ventricular contraction form which, in the main, follow the pattern induced by anoxemia and asphyxiation. However, sensitized experimental animals show both clinical and electrocardiographic changes upon the giving of small amounts of antigen such as horse serum and streptococcus protein in smaller amounts than appear to induce anoxemia. The cellular changes in the vessels and in the myocardium are comparable to myocarditis. The repetition of these experimental allergies by inhalants leads to changes usual to pulmonary heart disease. The perivascular changes noted in the injected protein atopy suggest a similarity to periarthritis nodosa.

The inconclusive but suggestive evidence that thrombo-angiitis obliterans may be a clinical manifestation of vascular allergy is discussed.

The work of Duke and Horton in the production of arrhythmias, tachycardias and syncope is particularly well presented. The occurrence of these manifestations in any patient deserves a consideration by his physician as the physical causes of allergy.

The effect of trial diets or elimination diets in essential hypertension is discussed with a higher

percentage of favorable results than is common experience in internal medicine.

The possibility of the allergic reaction acting as a trigger mechanism in angina pectoris is interestingly discussed with relation to food, coffee, smoking, hay fever and physical allergy.

There is included a very good protocol of fifteen cases of allergy presenting the major symptoms of tachycardia both with and without irregularity. The percentage of favorable results from the management of the allergy is approximately 50 per cent cure.

In summary the authors state that allergic processes cause demonstrable pathology in the blood vessels and in the heart tissue itself; uncomplicated asthma produces no changes; periarteritis and thrombo-angiitis obliterans are probably allergic in origin; heat, cold and effort produce angina, tachycardia and irregularities partly through the mechanism of allergy; some cases of essential hypertension and possibly of nephritis are related to allergy; allergy may be a factor in the occurrence of coronary artery occlusion in hypersensitive individuals; and cases are cited of paroxysmal tachycardia and irregularity benefited by allergic management.

The reader is left with the impression that this discussion of allergy in relation to cardiovascular diseases is valuable and that it may be safely used in everyday practice, provided the physician has a thorough examination of his patient and has placed the proper value on the organic disease present.

GRAHAM ASHER, M.D.

BLOOD PRESSURE IN THE AGED

Blood Pressure in the Aged. Henry I. Ressek. *Am. Heart J.* 26:11, 1943.

That the interpretation of blood pressure readings is far from uniform or settled is evident from the multiplicity of papers appearing on the subject.

Ressek reviews the work of numerous clinicians in this field, notably that of Bowes, Lewis, Miller, Alvarez and Stanley, Huber, Faught and, especially, the recent work of Robinson and Brucer. Throughout all these observations there is the evidence of a failure to agree upon a normal limitation of the systolic and diastolic levels as well as the pulse pressure. While Robinson and Brucer state emphatically that normal blood pressure is as immutable and as constant as the temperature and the pulse rate, there is no general agreement to this statement.

Only one fact seems to find all authorities in perfect accord and that is that systolic pressures rise with advancing years and that diastolic pressures do also but to a lesser extent and that these facts apply up to the age of 65. Much of the confusion seems to be the establishing of a normal in the earlier years of life; also the inclusion and exclusion of certain factors so that the end results as pointed out by Treloar "seem to be forced by manipulation to secure the desired result."

Ressek approaches the subject from an alto-

gether new angle in his classification in that he divides his cases into the following groups: (1) systolic hypertension, (2) diastolic hypertension, (3) normals (150/95 or less).

His observations were all made on a group of individuals between the ages of 60 and 95 who were inmates of the Snug Harbor for Sailors, a home for disabled seamen who had been incapacitated by age or injury. In all there were 1,000 individuals included in the group, all of whom were living under the same conditions and whose past life had been very much the same; also it had the advantage that almost all of them were of the same nationality (Scandinavian). The pressures were taken as a routine of the morning rounds and the element of emotion was not present.

He correlated his blood pressure findings with those found in 362 consecutive deaths from the previous decade, all of whom were similar subjects. The outstanding conclusions reached by his study are: (1) The average systolic and pulse pressure increase appreciably with years whereas the diastolic pressure shows but little variation after 65, and that is a slight decline in normal individuals. (2) The incidence of "normal pressure" (150/95 or less) falls as the subjects become older and less than 50 per cent fell in this group. (3) Normal systolic pressures show an increase with age regardless of what is taken as the upper limit. (4) Normal diastolic pressure shows a tendency to fall with age and the patients with low diastolic pressures increase correspondingly (70 or less). (5) Arteriosclerosis not only increases the incidence of systolic hypertension with age but also increases the pulse pressure of subjects in the normal class. (6) More than 25 per cent of all patients and more than 33 per cent of those more than 75 years had systolic hypertension. (7) A study of the ratio of actual to expected mortality revealed that those with systolic hypertension were of the same order as for those with normal pressures. (8) The incidence of diastolic hypertension increases more slowly with age; it was found in less than 25 per cent. (9) Normal as well as average diastolic pressure was comparatively low, and it would seem that the upper limits of normal have been set at too high a level in the aged. (10) The clinical course and life expectancy of aged patients with systolic hypertension suggests that it later originates as such and has its own distinct mechanism. For practical purposes the clinician may regard systolic hypertension in the aged as normal. (11) If systolic pressure of 120 is considered as an upper limit only 13 per cent would fall in the group.

Comment: The observations recorded as well as the classification of blood pressure in the aged is most logical. It is sensible and corresponds closely to some similar observations on blood pressure made by me some years ago on the inmates of the Confederate Home of Missouri, but my group was very much smaller and so was not as accurate as this group.

J. DEVOINE GUYOT, M.D.

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DECEMBER, 1943

EDITORIALS

THE SCIENTIFIC FUTURE

One of the problems of medicine in war is the continued dissemination of new facts and knowledge. More than one third of the active physicians of the country are in the Armed Forces. A far higher per cent of the young men—the physicians of the next generation—have been separated from the familiar libraries of journals and source books. True, the Army and Navy have tried to fill the void. Many large service hospitals have sizable libraries and subscribe to current publications. However, the number of general hospitals, station hospitals and other types of hospitals is too great to insure full coverage of all that is new in medicine. The man in the service is not able to solve the problem himself. He must be helped by those at home.

The *Army Medical Bulletin* and the *Naval Medical Bulletin* serve as a medium for papers directly related to the war effort such as disease conditions in the Solomons or in the Levant. The *Circular Letters* of the Surgeon-General's Office and the *News Letter* of the Bureau of Medicine and Surgery carry up-to-the-minute information but, again, almost entirely in the field of war medicine.

The Committee on Surgery of the National Research Council has prepared modern treatises on certain aspects of surgery. A Conference Group on Pathology sponsored an outline on the autopsy. Other committees and conference groups have collected the best scientific thought of the time and made it available to the government. The American Medical Association has undertaken the publication of a special journal—*War Medicine*—and many war numbers of other journals have made a contribution.

All of these efforts are most commendable and have a real place in the total effort. But they do not completely make up the deficiency. The physicians for America in 1950 and 1960 must not be

entirely separated from civilian medicine for several years in the 1940's. Some day these young men will be the senior practitioners. They cannot afford to be out of touch with the advances in knowledge of nonwar medicine for too long. When the "lights go on again," hypertension, arteriosclerosis, cancer, hyperthyroidism and chronic nephritis will again be the major concerns of medicine. Worthwhile steps have already been taken to remedy the separation. The American Medical Association, the American College of Surgeons and the American College of Physicians have organized a series of Post-Graduate Medical Lectures for the service hospitals in this country. Every civilian should feel honored to participate in this program. An invitation is to be regarded as a command performance.

More recently the Josiah Macy Jr. Foundation, of New York, has started to distribute reprints of selected articles to interested officers in the services. The project has met with enthusiastic support from those who have helped in the development of the plan and from the recipients. This is just one more evidence of the wise and considered policies of the great foundations which so generously have supported medicine in the past. The Friends of the Army Medical Library are striving to make available microfilm copies of articles requested by officers in out of the way places.

Undoubtedly American ingenuity and originality will work out other ways to further this project. Libraries in cities close to service hospitals will develop means to make their facilities more available. Gift subscriptions will be sent to relatives or friends. This is a job for the home front. The tradition of continuous education in scientific medicine must be carried forward.

OPPOSED TO SOCIALIZED MEDICINE

The following letter appeared in the *St. Louis Post-Dispatch* on November 6:

To the Editor of the Post-Dispatch:

I have read your editorial, "Kaiser Wakes the Doctors." You, like so many others, are confusing industrial medicine and group hospitalization, which have been successful for years, with the socialization of all medical practice.

The Illinois State Medical Society is sending out leaflets giving the actual facts of Senate Bill 1161 which is to come up in the near future.

Do you want a doctor who is assigned so many patients and allowed to take care of a certain number per day? Do you want a family physician on an eight-hour day?

In a hospital or clinic, this works, because one out of the group is on call at night and there is always someone available. But do you think for a minute that a doctor limited to \$5000 a year is going to be as conscientious about being on call 24 hours a day as he now is?

A medical education is just about the most expensive of any profession. Let me ask: Who is going to be so interested in humanity to endure the hardship and expense of this education only to go into politics?

My husband is a physician and a very good one. He is 38 years old and was well established in practice until he was called to military service.

For eight years he was employed by the State of Illinois in different state hospitals and prisons. Then for five years he was in private practice. For the last year, he has been in the Army. I have had ample opportunity to observe first-hand the difference between the attitude of a doctor on a salary regardless of what kind of work he does and the same doctor in his own practice with a personal interest in his patients. Now my husband has reverted to the same attitude he had during the years he was employed by the state. I assure you this is the attitude of a vast majority of doctors.

If the people are so short-sighted as to let a thing like this come into being, they will pay for it dearly, not only in cash but in lack of service.

How many people pay 6 or 7 per cent of their income for medical care annually? There may be occasional years when some member of the family has an operation or long illness, but that is far higher than the average doctor bill of any patient, year in and year out.

Your doctor has his income cut probably in half and the patient is paying about twice at least the amount he would ordinarily pay. Who benefits? The politician, of course, who must be paid to manage the whole affair. Is this the type of medical care you want?

MRS. E. H. SCHALLER

Waterloo, Ill.

MENINGOCOCCAL INFECTIONS

The sulfonamides apparently have scored again in the prevention and treatment of an infectious disease—meningococcal infections. In the last year the high incidence of meningococcal infections in both the civilian and military population has made possible carefully controlled studies. The United States Public Health Service reports 14,153 cases in 1943 up to September 8 as compared with a five-year median of 1,544. Reports of these investigations are just becoming available and point the way for vigorous steps in control, if the morbidity of meningitis should again rise.

In the field of prophylaxes, Kuhns, Nelson, Feldman and Kuhn¹ of the Army Medical Corps report on the control measures undertaken in Camp A in the Fourth Service Command. In March 1943 the weekly attack rate was 1.3 per thousand troops and the percentage of carriers was about 37 per cent. One group of 8,000 men was given 1 Gm. of sulfadiazine before meals three times daily for three days and another group of 9,300 men received no special treatment. In the next eight weeks not a single case of meningococcal meningitis developed in the 8,000 treated men while there were twenty-three cases among the 9,300 untreated controls. The carrier rate in the treated group one week after treatment dropped to 3.1 per cent and in the eight weeks did not go above 7.2 per cent. In the control group, the carrier rate in the same period fluctuated between 30.0 per cent and 57.2 per cent. Subsequent

studies at another camp showed that 1 Gm. twice a day for two days is probably equally effective.

In the field of therapy there are equally encouraging reports.² In over 1,200 consecutive cases of meningococcal infections treated in the United States Army Hospitals with a sulfonamide drug, usually sulfadiazine, the mortality was only 2.3 per cent. Several deaths followed fulminating symptoms and signs and no therapy would have been of avail. A part of this success has come from the recognition of early meningococcal infection during the local pharyngeal and invasion stages. A history of headache, nausea, vomiting, arthralgia and nasopharyngitis in the presence of an epidemic is presumptive evidence of infection. The Army recommends maintenance of a blood level of 15 mg. per cent during the disease and for from five to seven days after the temperature has returned to normal. With this level it is necessary to provide for a high fluid intake and output and alkalization of the urine.

Step by step epidemic disease is being brought under control. In the great epidemic of meningitis in New York in 1904-1905 the mortality was 73 per cent. Flexner and his colleagues developed an antiserum and the mortality was lowered to 30 per cent. Now with the sulfonamides the death rate is 2.3 per cent and epidemic spread apparently can be controlled. But drugs are not a panacea. They cannot replace the alert and wise physician who recognizes disease in the invasion stage and thus gives the drug a greater opportunity to act on the bacterium. Nor can they replace the judgment of the public health officer in the careful selection and disposition of other barriers to the spread of microorganisms.

NEWS NOTES

Dr. Sherwood Moore, St. Louis, has been appointed to the National Advisory Cancer Council by Surgeon General Parran.

Drs. Edward H. Skinner, George C. Lee and Hugh L. Dwyer, Kansas City, were speakers on October 27 at the first child health and development institute of a fall and winter program in Kansas City.

Drs. William H. Olmsted and Andy Hall, St. Louis, were guest speakers at the sixty-ninth annual meeting of the Southern Illinois Medical Association at Anna, Illinois, on November 4. Dr. Olmsted spoke on "The Importance of Nutrition in Gastrointestinal Diseases" and Dr. Hall on "What the General Practitioner Should Know About Urology."

1. Kuhns, D. M., Nelson, C. T., Feldman, H. A., and Kuhn, L. R.: The Prophylactic Value of Sulfadiazine in the Control of Meningococcal Infections. *J.A.M.A.*, 123:335-339, 1943.

2. Meningococcal Infections, *Bull. U. S. Army Med. Dept.*, 69:5-7, 1943.

Dr. Philip A. Shaffer, St. Louis, Dean of Washington University School of Medicine, was elected vice president of the Association of American Medical Colleges at a meeting in Cleveland, October 27.

Dr. Homer A. Sweetman, St. Louis, has been appointed superintendent of the St. Louis City Infirmary. Dr. Sweetman was formerly acting resident psychiatrist at the Malcolm A. Bliss Psychopathic Institute.

Drs. W. M. Wheeler and Edward H. Schaeffer, Sedalia, were guests of honor at a dinner given by the Pettis County Medical Society, October 18, in observance of their fiftieth anniversary in the practice of medicine.

Physicians in Missouri are required to obtain a certificate of registration from the State Board of Health before December 31, 1943, in compliance with the law requiring biennial registration. Forms for application may be obtained from the State Board of Health should physicians fail to receive them.

The following War-Time Graduate Medical Meetings, held under the auspices of the American Medical Association, the American College of Physicians and the American College of Surgeons, have been held under the direction of the Regional Midwestern Committee: Hot Springs, Arkansas, September 16, 22 and 30, October 7 and 15; Scott Field, September 25; Springfield, October 29.

Dr. Evarts A. Graham, St. Louis, has been awarded an honorary fellowship of the Royal College of Surgeons. The presentation was made by Major General W. H. Ogilvie of the British Medical Service at the British Embassy at Washington, D. C. Under usual conditions a fellowship in the college is awarded in London. The announcement of the fellowship was made last May when Dr. Graham was named to receive the Lister Medal for distinguished contributions to surgical science.

Scientific exhibits at the Chicago session of the American Medical Association, June 12 to 16, 1944, will be held at the Palmer House. Exhibits will cover all phases of medicine and the medical sciences with particular emphasis on graduate medical instruction for the physician in general practice. Application blanks for space in the Scientific Exhibit are now available and may be obtained by writing the Director, Scientific Exhibit, American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois.

DEATHS

Kuhlmann, Frederick C. E., M.D., Webster Groves, a graduate of Washington University School of Medicine, 1896; Fellow of the American Medical Association; honor member of the St. Louis Medical Society; aged 72; died September 26.

Barck, Carl, M.D., St. Louis, a graduate of Albert-Ludwigs-Universität Medizinische Fakultät, Freiburg, Baden, 1881; Fellow of The American Medical Association; honor member of the St. Louis Medical Society; aged 84; died October 2.

Miller, Edwin Lee, M.D., Kansas City, a graduate of Harvard Medical School, 1911; Fellow of the American Medical Association; President in 1935 of the Missouri State Medical Association; member of the Jackson County Medical Society; aged 56; died October 6.

Burkhardt, Edward Arnold, M.D., Kansas City, a graduate of the University Medical College of Kansas City, 1900; Affiliate Fellow of the American Medical Association; honor member of the Jackson County Medical Society; aged 67; died October 11.

Tilley, Robert Bruce, M.D., Plato, a graduate of the University of Missouri School of Medicine, 1873; member of the South Central Counties Medical Society; aged 70; died October 12.

Collins, Lisle Leaholme, M.D., a graduate of St. Louis University School of Medicine, 1919; member of the St. Louis Medical Society; aged 50; died October 14.

Bristow, George M., M.D., Princeton, a graduate of the College of Physicians and Surgeons, Keokuk, Iowa, 1877, and Louisville Medical College, 1881; former Councilor of the Missouri State Medical Association; former president of the Mercer County Medical Society; aged 88; died October 30.

INCIDENTALLY

FROM THE EXECUTIVE SECRETARY

On the civilian front the social schemers are proposing legislation (Wagner-Murray-Dingell Bill) designed to cut the throat of the medical profession.—From the battle front comes a letter from Lt. Gen. Mark W. Clark, Commanding General of the Fifth Army, eulogizing the marvelous service rendered by the medical department in the invasion of Salerno Bay.—Apparently these proponents for handcuffing the medical profession were not with the Fifth Army in the invasion of Salerno.

It might be said that the failure of the medical profession to gain wholehearted support of the public and an intelligent press may be attributed, in part, to the reluctance of many physicians to participate actively in civic affairs.—Does not direct contact with the public offer the most potent means of molding public opinion?—If it is not taken advantage of by individual physicians, who is to blame?—The truism that public officials determine to a large measure how the people's health shall be cared for and who shall do it brings the inevitable conclusion that doctors cannot fail to concern themselves with civic and political matters.

What have you done about the Wagner-Murray-Dingell Bill (S. 1161 and H. R. 2861)?

ORGANIZATION ACTIVITIES

COMMITTEE ON MATERNAL WELFARE

Under the heading of the State Board of Health in this issue, attention is called to the new fee schedule for maternity cases under the E. M. I. C. plan. This fee schedule went into effect November 1, 1943, and is an improvement over the old schedule in that it raises the remuneration for both maternal and infant care. There has been considerable discussion pro and con regarding the previous plan and the Committee on Maternal Welfare would appreciate it very much if the members of the Association would write the Chairman giving him their experience and opinion of the previous plan and their opinion regarding the new plan. All letters should be sent to the office of the State Association.

A resolution adopted by the staff of the St. Louis Maternity Hospital, Washington University Clinics and Washington University School of Medicine regarding the previous plan follows:

WHEREAS, The United States of America is at present fighting for democratic principles and the rights of the individual as opposed to the control of the individual by the state, and

WHEREAS, That while the plan for maternity care for the wives of service men theoretically gives the patient free choice of physician and the physician the right to refuse such a case, in practice it amounts to the government setting the fee which the hospital and physician must accept, this setting of a fee by the government being contrary to the inherent rights of the individual, and

WHEREAS, We as individual physicians in a democratic state feel that the government does not have the right to set our fees or those of the hospital, and

WHEREAS, The staff of the St. Louis Maternity Hospital has always been willing to give expert care to those in the lower income brackets and is willing and ready to continue to do so, and

WHEREAS, Washington University School of Medicine and the St. Louis Maternity Hospital have agreed to cooperate in the plan passed by the Congress of the United States and administered under the Children's Bureau and the State Department of Health, and

WHEREAS, The acceptance of this plan by the above mentioned institutions amounts to the practice of medicine by these institutions, and

WHEREAS, The members of the St. Louis Maternity Hospital Society, who constitute the staff of the hospital and are members of the faculty of Washington University, most of whom are also alumni of Washington University, object to this plan for the reasons:

1. It interferes with the rights of the individual physician and hospitals.
2. It puts the Medical School and hospitals into the practice of medicine.

Since we do not object to the government providing hospitalization for service men's wives who can not be taken care of at government hospitals, we suggest that, if the plan can be changed or interpreted to provide hospitalization without setting a fixed fee for a physician, the plan will be acceptable to us. Therefore be it

Resolved, (1) That in view of the above, we recommend that the St. Louis Maternity Hospital and Washington University Clinics and Washington University School of Medicine reconsider their action in accepting the plan and reject it in its present form; (2) a copy of this resolution be sent to the following:

1. The Dean of Washington University School of Medicine.
2. The Director of Washington University Clinics.
3. The Board of Directors of the St. Louis Maternity Hospital.
4. The Council of the St. Louis Medical Society.
5. The President of the Washington University Alumni Association.
6. The President of the St. Louis Hospital Council.
7. The House of Delegates of the American Medical Association.
8. The Board of Obstetrics and Gynecology.

This resolution shows that there is a definite opposition to the plan by a certain group of men in St. Louis and their criticism is not so much regard-

ing the fee but that the physician more or less has to accept the schedule as set up by the U. S. Children's Bureau.

E. LEE DORSETT, M.D., Chairman,
Committee on Maternal Welfare.

THE STATE BOARD OF HEALTH

FEE SCHEDULE FOR MATERNITY CASES

State Board of Health
September 22, 1943.

Edwin F. Daily, M.D.,
Director, Division of Health Services,
U. S. Department of Labor,
Children's Bureau,
Washington, D. C.

Dear Doctor Daily:

This office has received many complaints from the physicians in Missouri regarding the fee schedule set up in our Emergency Maternity and Infant Care Program for 1944.

The physicians quote newspaper articles from California, New York, Wyoming and other states where the fee schedule for work under the Emergency Maternity and Infant Care Program is much higher than that set up in Missouri under our plan. Each complaint points out the fact that in Missouri the standards of obstetrical care are on a par with such practices in the other states; that the cost of living in Missouri has gone up in the same proportion that it has in other states; that the cost of medical care has also increased and that doctors feel there is a discrimination against them in Missouri when we operate our plan under the present fee schedule. The physicians feel that they should be reimbursed at least for the cost for the care that they render, so that they, in these busy times, will feel justified in caring for cases under the Missouri program.

This office feels that an increase in the fee schedule for obstetrical patients from the present schedule of \$18-\$25-\$35 for care as outlined in the plan to a fee schedule of \$35 and \$50, would eliminate the discord as evidenced by the doctors in the State of Missouri, and that some of the leading obstetricians in the larger cities, who are now refusing cases because of the small fee allowed, would be willing to reduce their normal fee to a fee of \$50 thereby insuring cases in these areas the best of care.

I am therefore requesting that the Children's Bureau grant the State Board of Health of Missouri authority to revise the fee schedule of the Emergency Maternity and Infant Care Plan and Program for Missouri for the fiscal year 1944. The need for this revision of the fee schedule has been reported to various members of the State Board of Health and discussion has taken place at various board meetings to increase the maximum payment to physicians for services rendered.

May I hear from you in the very near future regarding this matter?

Yours very truly,
(Signed) JAMES STEWART, M.D.,
State Health Commissioner.

THE FEE SCHEDULE FOR MATERNITY CASES UNDER THE MISSOURI EMIC PLAN EFFECTIVE AS OF NOV. 1, 1943

1. A maximum fee of \$50. This included complete medical care of maternity cases during the period of authorization.

2. The above maximum fee will be reduced according to services rendered as follows:

a. If fewer than 7 prenatal examinations are made to the patient during the period of authorization, the fee paid to the attending physician will be reduced by \$2.00 for each visit less than seven.

b. If no prenatal examinations were made during the period of authorization the fee would be reduced by \$15.00.

c. If no postpartum examination is made approximately 6 weeks after delivery the fee will be reduced by \$5.00.

d. If all prenatal care has been done in a clinic and the attending physician does only the delivery, care during the puerperium and the postpartum examination, the fee paid to the physician will be \$35.00.

e. If prenatal care only is given to the patient and the patient is delivered elsewhere, payment will be made for prenatal care on the basis of \$2.00 per visit with a maximum payment for any one case of not more than \$15.00.

f. Consultation service maximum fee \$15.00 per consultation per patient. Mileage will be paid consultant according to areas established in various communities.

3. Fee for nonobstetric surgery where necessary for the care of the pregnant women, when authorized, will be paid on the following schedule: major operations \$50.00; minor operations \$25.00; anesthetic \$10.00.

Fee schedule for pediatric care under the EMIC program (authorization will be made for sick infants only, all well baby care is a direct responsibility of the mother and the family physician).

Payment for services to a physician for care of a sick infant are to be calculated from the following maximum scale of payment schedule:

A. First visit during first year of infant's life if at home—maximum \$4.00; if in office or hospital—maximum \$2.00.

B. All additional visits in first year of infant's life if at home—maximum \$2.00; if in office or hospital \$1.00.

C. With maximum payment for first two weeks of illness \$10.00 per week.

D. With maximum payment for any subsequent week of illness \$5.00.

If the total cost on a per visit rate is less than the maximum allowable under A & B above, the physician will be paid on the Visit rate rather than the Weekly rate. The fee schedule is as follows:

1. Mileage for rural cases 15c per mile.

2. Surgical operations: a. Major operation \$50.00 (i.e. thoracotomy, incarcerated hernias, etc.). Pyloric stenosis consultation will be expected prior to all surgery. b. Minor operations \$25.00 (thoracentesis, fractures, etc.). c. Transfusion, circumcision, laboratory procedures and other minor office procedures \$5.00.

Payment to attending physicians or consultants by the State Board of Health will be made on the basis of the following:

1. The physician shall submit an invoice showing dates and type of visit for pediatric cases to the Division of Child Hygiene of the State Board of Health.

2. The physician shall execute and keep all medical records required by the Division of Child Hygiene of the State Board of Health. Payment will be made under the fee schedule heretofore described in this plan as shown by the statement of the physician on the completed medical records (CH-22-CH-35).

COMBINED SULFONAMIDE AND DRAINAGE TREATMENT FOR BRONCHIECTASIS

Combined sulfonamide and bronchoscopic treatment in 10 cases of acquired bronchiectasis (dilatation of the bronchi or of a bronchus) resulted in a considerable reduction in daily sputum volume, with favorable alterations in the bacterial flora, Charles M. Norris, M.D., Philadelphia, says in *The Journal of the American Medical Association* for November 13 in a preliminary report of his investigations. The treatment consisted of sulfadiazine given by mouth in courses lasting from four to fifteen days and, as an adjuvant measure to improve bronchial drainage, the bronchi were drained by means of a bronchoscope at intervals of from two to four days during the time the sulfadiazine was being administered.

Dr. Norris says that the plan of treatment should prove of definite value as a preliminary to certain surgical procedures involving the lungs and that it is probably worthy of trial in cases of well established non-surgical bronchiectasis. He emphasizes, however, that his data are preliminary and that further study and observations will be required to confirm the impression that the measures described are of actual value.

Spraying of the bronchi with a solution of sulfadiazine was tried in some cases by Dr. Norris but with less satisfactory results than those obtained by oral administration.

COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL 1943

(SOCIETIES WHICH HAVE PAID DUES FOR ALL MEMBERS
AND DATE PLACED ON HONOR ROLL)

- Perry County Medical Society, November 24, 1942.
Benton County Medical Society, November 27, 1942.
Chariton County Medical Society, November 28, 1942.
Camden County Medical Society, December 3, 1942.
Miller County Medical Society, December 3, 1942.
Barton County Medical Society, December 4, 1942.
Scott County Medical Society, December 8, 1942.
Montgomery County Medical Society, December 9, 1942.
Moniteau County Medical Society, December 14, 1942.
Cass County Medical Society, December 17, 1942.
Ste. Genevieve County Medical Society, December 21, 1942.
Howard County Medical Society, December 24, 1942.
Webster County Medical Society, December 29, 1942.
Carter-Shannon County Medical Society, January 7, 1943.
Clinton County Medical Society, January 15, 1943.
Macon County Medical Society, January 28, 1943.
Dallas-Hickory-Polk County Medical Society, February 3, 1943.
Holt County Medical Society, February 24, 1943.
Pulaski County Medical Society, February 26, 1943.
Newton County Medical Society, March 5, 1943.
Morgan County Medical Society, March 10, 1943.
Dent County Medical Society, April 2, 1943.
Pettis County Medical Society, April 9, 1943.
Jasper County Medical Society, June 1, 1943.
Jefferson County Medical Society, June 3, 1943.
Platte County Medical Society, June 19, 1943.
Cooper County Medical Society, September 1, 1943.
De Kalb County Medical Society, September 3, 1943.
Mercer County Medical Society, September 3, 1943.
Henry County Medical Society, September 7, 1943.
St. Charles County Medical Society, September 10, 1943.

ASSOCIATE EDITORS: COUNCILORS OF THE TEN COUNCILOR DISTRICTS

EIGHTH COUNCILOR DISTRICT

WALLIS SMITH, SPRINGFIELD, COUNCILOR

A Wartime Graduate Medical Meeting was held Friday, October 29, 1943, at the O'Reilly General Hospital in Springfield, Missouri, for the Medical officers of O'Reilly, Fort Leonard Wood, Camp Crowder and the civilian doctors of the Eighth Councilor District of the Missouri State Medical Association.

Dr. Frank D. Dickson, Kansas City, appointed by the War Department as chairman of Region 16 (including Missouri, Kansas, Arkansas and Oklahoma) was instrumental in arranging the program, which was as follows:

2:30. "Penicillin Therapy," Major Edw. P. Burch, MC., O'Reilly General Hospital.

3:00. "Present Day Status of the Sulfonamides," Dr. Paul Hageman, St. Louis.

3:30. "Tropical Diseases and Malaria," Dr. Russell Blattner, St. Louis.

4:00. "Trauma of the Abdomen," Dr. L. P. Engel, Kansas City.

4:30. "Reconstructive Surgery of War Wounds," Major Wm. S. Kiskadden, MC., O'Reilly General Hospital.

5:00. Inspection of Hospital by Guests.

6:30. Buffet Supper. Officers' Club.

8:00. "Psychiatric Problems in General Hospitals," Capt. Clarence M. Schrier, MC., O'Reilly General Hospital.

8:30. "Low Back Pain and Disability: Orthopedic Point of View," Dr. Frank D. Dickson, Kansas City.

9:00. "Low Back Pain and Disability: Neurologic Point of View," Captain Wm. H. Meade, MC., O'Reilly General Hospital.

Following the inspection of the hospital a bounteous buffet supper was served in the Officers' Club at which all doctors were guests of the O'Reilly Group.

The attendance was 300, about equally divided between medical officers and civilian doctors. Among the civilian group were men from all parts of the state, with councilors and officers of the State Association well represented.

It was the unanimous opinion that the fine program and large attendance made this one of the best meetings of the year.

WALLIS SMITH, M.D., Councilor.

BOOK REVIEWS

OBSTETRICAL PRACTICE. By Alfred C. Beck, M.D. Professor of Obstetrics and Gynecology. Long Island College of Medicine; Obstetrician and Gynecologist-in-Chief, Long Island College Hospital, Brooklyn. More than one thousand illustrations. Third Edition. Baltimore: The Williams & Wilkins Company. 1942. Price \$7.00.

The third edition of the popular Beck textbook of obstetrics is an excellent guide to the subject and one of the most profusely and vividly illustrated texts available. Very good use has been made of photographs and diagrammatic sketches to bring home to the reader some of the more involved procedures which are so difficult to portray in word-pictures. Particularly is this true in the presentation of the chapter on mechanism of labor, a subject which often proves most difficult for the student to grasp when dependence is placed too completely on descriptive narration. Likewise, the presentation of forceps delivery and version is made much clearer by the step-by-step diagramming of these operations.

Possibly because of the considerable space devoted to such illustrations and the simultaneous need for keeping the size of the volume within reasonable bounds, there is a noticeable absence of detail in the narrative consideration of some phases of the specialty. This is particularly evident in such chapters as those on toxemia of pregnancy and medical and surgical complications of pregnancy.

The book is well indexed and the references given at the end of each chapter are well selected. A very readable type has been used and the publisher has provided a satisfactory though simple binding. The text can be recommended, particularly to the general practitioner who requires a reference work which is quickly and easily consulted.

J. A. H.

ROENTGENOGRAPHIC TECHNIQUE. A Manual for Physicians, Students and Technicians. By Darmon Artelle Rhinehart, A.M., M.D., F.A.C.R. Professor of Roentgenology and Applied Anatomy, School of Medicine, University of Arkansas; Roentgenologist to St. Vincent's Infirmary, Missouri Pacific Hospital, and The Arkansas Children's Hospital, Little Rock, Arkansas; Trustee, American Registry of X-Ray Technicians. Third Edition, Thoroughly Revised. Illustrated with 201 Engravings. Philadelphia: Lea & Febiger. 1943. Price \$5.50.

This book has been revised thoroughly but the general plan remains unchanged. The technical procedures are based on thickness and density of the part to be examined. It contains a wealth of established and accepted data and is especially designed for x-ray technicians and students in roentgenology.

The principles of roentgenographic technic are very clearly demonstrated, enabling the technician to grasp the fundamentals. The author is still of the opinion that a technic satisfactory in one laboratory cannot be transferred to another and always give satisfaction.

This is an excellent manual on the technical phases of radiography and the material is so correlated that the student may grasp the essentials. Considerable new material has been added, illustrations changed and the book increased in size.

I. H. L.

A MANUAL OF CARDIOLOGY: By Thomas J. Dry., M.A., A.B., Ch.B., M.S. in Medicine. Assistant Professor of Medicine, University of Minnesota (Mayo Foundation); Consultant in Section on Cardiology, Mayo Clinic. Illustrated. Philadelphia: W. B. Saunders Co. 1943. Price \$3.00.

Although there are several good textbooks available for the practitioner of medicine today, this new text, "Manual of Cardiology," will be very interesting to those who in this busy time do not have the opportunity to read the more extensive literature.

This is a rather concise, clearly written book concerned primarily with cardiology. The normal heart is discussed in the beginning portion and from that starting point the various deviations from the normal are considered. The underlying pathologic physiology is explained briefly, roentgen ray interpretations and pictures are presented and the explanation for signs and symptoms are well explained. Within the confines of this particular text, some 290 pages, one is brought up to the present concepts and diagnoses of all phases of heart disease including treatment.

Accompanying each particular disease of the heart there are in addition to the roentgen ray, diagnosis, adequate explanation and value of the electrocardiograms and their interpretation.

This is indeed a useful book being somewhat condensed and one does not have to spend considerable time reading various and sundry theories in order to obtain a clear cut idea of cardiology.

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